

The Unsung

THIS book by Mrs Diver, whose knowledge of India is unrivalled, is an account of the very remarkable work done by British engineers and officials to improve the lot of the people of India. She tells in very graphic form of the building of roads and railways, of canals, bridges, the great irrigation schemes, the conquest of the Khyber Pass, and the war against famine and disease. All of these works have been of supreme importance in the welfare of our Indian Empire, but the men who carried them out are practically unknown outside of engineering circles and dry official records. How many people, for instance, have ever heard of the Periyar project, a stupendous undertaking by which a desert was transformed into a rich and fertile province, or of the almost insuperable difficulties which had to be overcome in the building of the Khyber railway? Mrs Diver also tells of the bigotry, ignorance, and superstition which had to be overcome before these projects could be started, and of the many heart-breaking obstacles which came in the way of their fulfilment.

At the present time, when we hear so much unjust criticism about British rule in India by people who ought to know better, and while the All-India Congress clamours for that millennium when India will once more be left to her own devices so that she may become the easy prey of the next conquering race, we submit that this book will prove a useful educational factor in schooling the British public as to its rights and responsibilities towards India, and will also act as a valuable corrective to the vast amount of misinformed writing which has appeared about India of late years.

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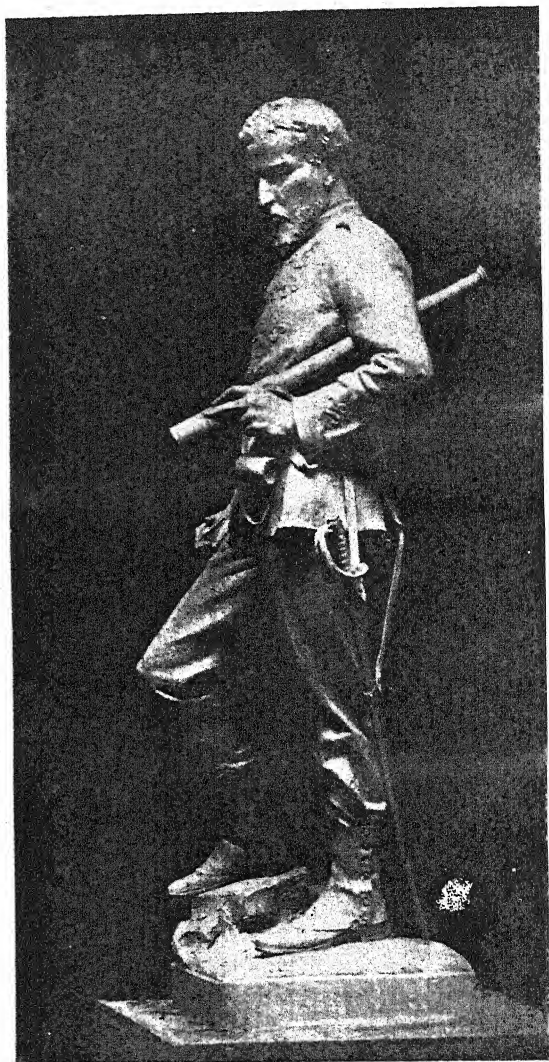
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THE UNSUNG

A Record of British Services in India



Delhi Statue of Sir Alex. Taylor, K.C.B.,
as a young man.

THE UNSUNG

A Record of British Services in India

BY

MAUD DIVER

AUTHOR OF 'HONORIA LAWRENCE,' 'ROYAL INDIA,' 'THE SINGER
PASSES,' 'THE DREAM PREVAILS,' ETC., ETC.

'India is the greatest achievement of the English race; and there is large hope for India, if Englishmen and Indians work together with forethought and caution. Nothing that India could now do would detract from the greatness and nobility of the English achievement.'—S. WILLIAMSON.

'I can understand that many thoughtless people may feel uneasy about our imperial past. I do not understand how any intelligent people can fail to be expectant and proud in regard to our imperial future.'—HAROLD NICHOLSON.

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THIS BOOK IS DEDICATED

in grateful acknowledgment

TO THE MEN WHOSE GENEROUS HELP
HAS ENABLED ME TO WRITE IT :

in particular to

MAJOR-GENERAL SIR CLEMENT MILWARD

K.C.I.E., C.B., C.B.E., D.S.O.

SIR THOMAS WARD

C.I.E., M.V.O.

AND

VICTOR BAYLEY

C.I.E., C.B.E., M.I.C.E.

MAUD DIVER.

GUIDE TO PRONUNCIATION

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|-----------------------|------------------|--|----------------------------|
| <i>a</i> | as in <i>but</i> | | <i>i</i> as in <i>been</i> |
| <i>ā</i> | „ <i>fār</i> | | <i>u</i> „ <i>hood</i> |
| <i>e</i> | „ <i>let</i> | | <i>ir</i> „ <i>deer</i> |
| <i>é</i> or <i>eh</i> | „ <i>hay</i> | | |

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FOREWORD

'History records nothing that can approach the British achievement in India; and the world will never see the like again.'

—LORD SYDENHAM OF COOMBE.

At a time when England's work for India looks like nearing an end—though it may be nearing its finest phase—one feels justified in attempting even a partial record of essential work for the country and the people carried out during the most creative period of British rule. Little of that work is realised outside India, where it is mainly taken for granted; and a large measure of it has been done by men in the less-regarded Imperial Services—Public Works, Police, Woods and Forests, Education, to name only a few; men who, in Kipling's phrase, 'mostly cursed their work, yet carried it through to the end, in difficult surroundings, without help or acknowledgment'; their health often taxed by extremes of climate almost beyond human endurance.

'We all think we know something of India,' wrote Ian Hay twenty years ago, 'its military life, its official and viceregal activities: . . . but of the men who have built India up and held it together we hear nothing: . . . the men who preserve forests, who build dams and canals, who cause two blades of rice to grow where one grew before. We take them for granted; and, to a great extent, they take themselves for granted. That is why we never hear of them. . . . They work behind the scenes, facing emergencies, devising expedients. They see to it that, in spite of official vagaries above and seditious propaganda below, the dams hold, the canals irrigate, the grass grows and the British Raj endures.'

The fact that it may ultimately abdicate (if India ever achieves political unity?) detracts nothing from the truth of that last. What the whole country owes to those unromantic, inconspicuous men of the West is past com-

puting, though they themselves have rarely seen it in that light. Their devotion has been mainly to the task in hand, the immediate responsibility or demand. Absorbed in these, they have served the larger issue unaware, with all their strength, honesty and perseverance; a form of service that exacts heavy toll in health and human deprivations, for which neither pay nor promotion can compensate. The best of them have been actuated mainly by love of the land and concern for its people, by a steadfast belief in the justice they imposed; not realising then, as now, that the elaborations of Western law courts were less well adapted to India's need than the simpler more summary forms of justice favoured by men of the Lawrence period.

And how many prejudiced critics, British or Indian, take account of the fact that those early traders of the East India Company—or their sons—went back afterwards as servants of India, that the children of those who had 'shaken the Pagoda tree' returned to teach and establish justice, that conquering soldiers remained to ensure peace in the land and banish fear of invasion.

Of the rank and file among British officials in all Services, it may be truthfully said that they have been 'willing slaves, making bricks for builders yet to come; believing that their work would endure and by it they would be judged.'

In point of fact, they did more than build; a word that suggests dead brick and stone. They created between them a living Indian Empire that contained within itself the elements of growth; and growth is all. It cannot be too definitely stated that no one planned to conquer India or evolve its Empire. Britain's greatest work—there as elsewhere—was carried out by individual men of genius and character, most of them disinterested men—a point too often overlooked. Neither plans nor 'planners' cramped their native capacity for solving problems and dealing with human situations humanly as they arose. In essence, theirs was no political achievement, though often adversely affected by the pendulum-swing of party politics in England and more recently by the 'political-minded' few of modern India,

who claim to speak for many millions, and are frequently disposed to misrepresent or deny the value even of Britain's outstanding services to their country.

Without undue complacency one may be allowed to counter the cheap charge of exploitation by a partial record of things done that will be attempted in this book.

Financial gain, accruing to Government from railways and great public works, has been spent almost entirely in and for India. It has never been the main motive behind any great undertaking. The aim has always been to develop the country and increase the well-being of its people. Furthermore, in no case does any question of profit arise for the men who do the actual work; men who seldom reap any adequate reward beyond the inner satisfaction of the 'job well done.' For those who are engaged in the more human services—education, welfare and the never-ending battle with plague, pestilence and famine—there remains the deeper spiritual satisfaction of suffering alleviated and lives saved often in their own despite. Only in reports or blue books can one find brief, passing tributes to the heroism of doctors, nurses, missionaries and Famine Officers who would not, for a moment, associate themselves with that over-used word.

Nevertheless it is they and their like who play leading parts in my Plain Tales from actual India; and, if these are mainly confined to the Punjab, it is because the scale of the land is too immense for any adequate record of the ways and works carried out in every Province; also because in few other Provinces have more stupendous feats of engineering been achieved. Certainly nowhere else, except in Sind, has the face of the land been transformed as completely as the Canal Colonies have changed the whole aspect of the Punjab.

These, in the space of forty years, have converted its immense desert area into one of the great granaries of the world; and one of the richest tracts in India, if not in Asia.

That almost incredible transformation has been carried out entirely by engineers, military or civil, and completed by the human work—medical, missionary, educational—of

establishing colonists with their towns and villages in these newly created regions ; thus relieving crowded centres and ultimately banishing India's chronic dread of famine.

With the exception of those famous colonies, the Punjab may be fairly said to represent all that has been done on the same lines elsewhere. It also includes geographically the North-West Frontier, the most interesting and vitally important region of the whole Indian Empire.

During the unrivalled reign of the Lawrences, the Punjab did give an impetus and set a standard, in all departments, hardly to be excelled, with Henry as political chief of the Triumvirate Board, and John devoting his practical talents to developing and financing the newly won kingdom.

In that great task both brothers were ably served by their Chief Engineer, Colonel Robert Napier, a man of vision and vast ideas, who inspired those under him to work, as he did himself, unremittingly.

'Great public works—chiefly roads and canals—were inaugurated on a scale that recalled the engineering feats of ancient Rome.' Outstanding among these was the Punjab section of the Grand Trunk Road—a work of the first magnitude. Yet it was but one item in Napier's immense building programme that seemed like to prove a heavy drain on the East India Company. Instead, by a miracle of financial genius, John Lawrence made the Punjab 'pay' from the beginning, though his colleagues, Henry Lawrence and Napier, were constitutionally incapable of economy.

Both proved themselves, in the event, capable of far greater things. The Lawrence group of men laid broad and deep the foundations of British rule ; and, in a surprisingly short time, gained the trust and loyalty of a warlike people—the Sikhs. Their virtual creation of the Punjab—a record unsurpassed—effectively illustrates the nature of the tales I have to tell.

True, neither the Lawrences nor their Chief Engineer—who became Lord Napier of Magdala—have remained 'unhonoured and unsung' ; but of the works they designed, of the men who responded to their gift for leadership, too little is known or remembered in these later days, when it

has become the fashion to decry the West and all its works in connection with India; to condemn even the obvious benefits arising from British rule as 'exploitation' of the country and its peoples: a phrase as undefined as it is unproven and unjust.

It may, of course, be argued that under any other European tutelage India would probably have made the same material progress in view of the general world development that prevailed throughout the nineteenth century; but there is justice in the claim put forward by the present Sir Henry Lawrence, K.C.S.I.—great-nephew of his famous namesake—that Britain's work for India amounts to more than economic development and security from invasion. He lays emphasis on a gradual change in the moral atmosphere of India by no means due to the all-pervading theocracy of her god-intoxicated millions. 'Something intangible and subtle which cannot be measured in miles of iron and steel or bricks and mortar'; a change that has 'operated on the minds and hearts of the people and has effected a moral revolution.'

This, he claims, is the 'outstanding result of British rule, and is derived from precepts of equal law and justice from the influence of Christianity . . . the example of good administration, the equal dealing between man and man which are the chief glories of the British Empire: . . . intangible benefits far superior to anything that can be claimed in the way of material improvements. On the other hand, any hostile critic . . . is entitled to be sceptical of the statement that the Indian public conscience, amongst the educated classes, has made incredible advances in this last half century.' Again, it is the little recognised work of individuals, District Officers, teachers, missionaries, doctors—men and women, their personal influence on the 'minds and hearts of the people,' that weave the human pattern of my theme. The tales of their work and works—a few out of hundreds—will be told mainly through studies of individual men who not only rendered admirable service themselves but inspired those under them with their own high standards of public spirit; men who were proud to be reckoned as building

stones in that complicated structure the British Administration of India.

Criticised, cursed, admired—often unwillingly—it remains a triumph of its kind: as witness the tribute elicited from a thoughtful writer, mainly critical of the white man in relation to India and Indians: 'My æsthetic sense was pleased not only with India—as now discovered—but with an alien work, which, as the highest expression of national genius, may justly be called a work of art. This was the English administration. . . . Like the dominant theme in a symphony, it is always present or presaged. Its comfort is mental as well as physical. Indians know this, whatever their politics. Let them take the administration and preserve it. The English remain its artist. It stands by itself in history proud and incomparable. I am pleased that it is English . . . but it needs no patriotism to appreciate such a monument. . . . To see a great race given scope for the exercise of its supreme strength, to see it conduct the art of Government on a scale and with a perfection accomplished by no previous race, is to achieve that sublime pleasure in the works of man which is ordinarily conferred only by the great artist. This I saw in India.'

The writer of that sincere tribute saw chiefly the political edifice, the ups and downs of race relations, mainly in the greater cities where causes of friction abound. That relation can be seen at its best among all ranks of the Indian army and in those practical services where the Sahib and his assistants are working together towards one immediate end—the completion of road, bridge, railway, whichever it may be; each in his high or humble rôle intent on adding some stone, some wheel or line to the total of that immense and varied India which has, in great measure, been developed and unified by the ceaseless background work of British and Indian men, who, for the most part, have remained unhonoured and unsung.

THE GRAND TRUNK ROAD AND SOME EARLY RAILWAYS

I

ROAD AND RAILWAYS

*'Pioneers, O pioneers!
Not the cushion and the slipper, not for us the
tame enjoyment.
We take up the task eternal and the burden and
the lesson—*

Pioneers, O pioneers!'

—WALT WHITMAN.

'WHAT is the Grand Trunk Road?'

That random question, asked by an intelligent woman unfamiliar with India, could probably not be answered in detail by many of her kind, even if they chanced to have read a half-forgotten *Kim*, and tramping with his Lama down the long double avenues of that wonderful highway—'the backbone of Hind.'

To the old cavalry Rissaldar, who names it so, Kipling has ascribed a word-picture in his own characteristic vein: 'For the most part it is shaded with four lines of trees; the middle road, all hard, takes the quick traffic. . . . Left and right is the rougher road for heavy carts. . . . All castes and kinds of men move here. Look! Brahmans and *chumars*, bankers and tinkers, barbers and *bunnias*, pilgrims and potters—all the world coming and going. It is to me as a river from which I am withdrawn like a log after a flood.' 'And truly'—adds the author—'The Grand Trunk Road is a wonderful spectacle; a stately corridor; all India spread out to left and right. It runs straight, bearing, without crowding, India's traffic for fifteen hundred miles—such a river of life as nowhere else exists in the world. . . .'

The fifteen hundred miles, laid down in some forty years,

now runs on from Peshawar through the Khyber Pass to Kabul city : a spinal column such as few countries anywhere near the size of India can boast.

In earliest times the Path, in later times the Road, has exercised its peculiar fascination over the restless spirit of man, eternally attracted by its promise of adventure and freedom from the trammels of town, by the lure of new places and new faces. Through a wild and warring country it runs as a symbol of peace ; for, if trade follows the flag, so do cultivation, wider knowledge and friendlier human contacts follow the Road.

Not until the eighteen-thirties were the first '*pukka*' main roads undertaken by the East India Company ; feelers from the three chief cities of the south—Calcutta, Bombay and Madras. Before these, there were only routes marked out and used, since Mogul times, mostly by marching armies and by travellers, on horseback, in palanquins or country carts. There were also the three great rivers, Ganges, Jumna and Brahmaputra, with their leisurely traffic of flat-bottomed paddle-boats, moving by day and moored at night ; time being of no account, so long as journey's end came at last.

The decline of river traffic began in 1828 with early work on the Grand Trunk Road, that was to follow the old route from Calcutta to Delhi. As usual there were those who doubted the need for a metalled highway. River travel was cheaper, if slower ; but Lord William Bentinck, Governor of Bengal, looking to India's future, resolved to push on with a project that was to become the most remarkable thoroughfare in India, if not in the world. Once begun, it crept northward, mile by mile, under difficulties and discouragements inconceivable to the modern mind. Raised a few feet above the plain, to save it from flooding in the rains, its massive rock foundation was laid down by crowds of chanting coolies ; its top-dressing of nodular limestone flattened under huge rollers, each pulled by a hundred Indians. Beyond cavil the all-enduring coolie, more often cursed than commended, may fairly be reckoned among those who have shared in the making of many unrealised marvels—and remained unsung.

The wide rivers that must be crossed were first ferried and eventually spanned by mighty bridges to form a continuous highway to the far North.

'Then for the first time in history wheeled carriages rolled across the land, and the map of India began to shrink. The Grand Trunk Road developed a life of its own : marching regiments behind the blare of trumpets and cheerful brass bands ; wedding processions with jangle of bells and laughter and ribald jokes, a trail of scarlet litters ; holy men pacing sedately from shrine to shrine ; trade-carrying carts, drawn by horse or bullock, travelling twice their normal distance in a day on the smooth hard road.'

The traffic it carried before railways appeared was incalculable. The whole thickness of metalling had to be renewed every six years. Delays were endless : lack of funds and skilled labour ; lack of materials and transport over a roadless country. But even at a snail's pace, the Road moved on and on to its ultimate end : fifteen hundred miles of tree-shaded thoroughfare : ' a truly remarkable monument to early British energy in India. For boldness of conception, worked out under vastly difficult conditions, it has hardly ever been surpassed.'

A further tribute is worth quoting from the *Life of Lord Lawrence* : ' The Romans were the great road-makers of history ; but the Grand Trunk Road may—in the difficulties it overcame and the benefits conferred—challenge comparison with that greatest triumph of Roman engineering skill, the Appian Way.' It became *the* Road, the one huge artery through which the life-blood of India flowed ; and a general demand went up for more of its kind.

But the 'forties brought an unforeseen check to this belated zeal for road-building.

In far-off England travel and traffic were already being transformed by the inventive genius of the Stephensons, father and son, who had discovered the power of steam and turned it to practical account ; first in mining districts ; then in a grid of railway lines that gradually scarred the whole country, in the teeth of furious opposition from a horse-loving race. Inevitably progressive enterprise won the

day; and, in course of time, an England converted to railways began looking towards India, with her vast possibilities and slow-moving way of life. Why not railways out there also?

The revolutionary idea was mooted mainly by one man, Rowland Macdonald Stephenson—unrelated to the famous inventors—a brilliant junior in the first Steam Navigation Company that afterwards became the P. & O.

In and out of season he pressed the project on the Court of Directors in London. But that august body strangely failed to recognise public works as part of their policy. 'They regarded the construction of road or canal—much like a war—as a necessary evil, to be undertaken reluctantly and, if possible, not to be repeated.'

But young Stephenson's vision, brains and limitless energy were stimulated rather than discouraged by short-sighted business men, very much alive to the risks involved. White ants would destroy wooden sleepers. Floods would wash away embankments. Rank vegetation would choke the lines. Indians would never travel by rail, even if the crazy idea could be carried out. Undaunted by dismal prophecies, Stephenson gave up important work in London and brought his family to India, firmly resolved to remain there till he had achieved his purpose.

Lord Ellenboro'—an opinionated Governor-General—dismissed the whole scheme as 'visionary,' but, on his recall, Sir Frederick Halliday—acting in his stead—recognised the importance of the scheme, and encouraged the laying down of several lines northward from the main cities.

In 1845 the Court of Directors arrived at a half-hearted decision to face the costly experiment. But first the Board of Control must express its views at great length to the Court of Directors, who tossed the ball back again: a matter of months each way. The B. of C. and the C. of D. irresistibly suggest a Pickwickian episode, with the Circumlocution Office in full working order.

Not until 1849 did Lord Dalhousie's vigorous mind give fresh impetus to the long-delayed undertaking; but, by that time, a decade of ceaseless work and worry in a deadly

climate had told on Stephenson's health. Only his invincible spirit remained to lift him through. Year after year, pulled down by climate and fever, he sat in his office driving on that vast concern with the energy of five men; combating differences with Government, differences with contractors, solving problems without end, and never losing heart or temper with any obstacle. Though he wrote with difficulty and could not tolerate fools, he became the very soul of that great concern. 'Every man under him knew he could rely on Stephenson for support. However formidable the difficulties, he demanded that none should talk of impossibility, that non-existent labour be imported, and undiscoverable minor contractors created out of the ground!' His self-reliance amounted almost to a fault; but it was that which carried him through.

Not until 1855, after ten years of unceasing toil, was the first 120 miles from Calcutta to Benares opened by Lord Dalhousie; and thereafter the line rolled steadily forward with only one serious interruption—the Mutiny, which held up all important projects for nearly a year.

Stephenson himself escaped that grim experience by the complete collapse of his hard-driven body in 1856; yet from distant London he continued to direct and push on the great work of his life. Only after much persuasion he was induced to accept a Knighthood; and a pension of £2000 a year, out of the surplus earnings of his line. Even then, his ever-active mind, looking beyond the horizon, dreamed of linking up the Empire by a direct line from Calais to India; actually the first inception of the Bagdad railway; but the time was not ripe for so mighty an enterprise.

Mentally and physically he continued to run upstairs six steps at a time till well after his eightieth year; but his abounding energy failed him at last. He had achieved enough to satisfy three men and had justly earned the title, 'Father of Indian Railways'—one of the greatest experiments of all time: railways that were to exercise an influence more far-reaching than in any other country of the world. Yet how many now, in England or India, know anything of

Stephenson or of his astonishing work? Far from unhonoured, in his own day, he yet remains virtually unsung.

Thus, through the driving impetus of one man, road-making in India—begun too late—was checked by the unlooked for success of a rival enterprise. Wiseacres who declared that Indians would never travel by rail, found themselves entirely in the wrong. The 'fire carriage,' that fearsome monster, soon became so popular as to alter the whole *tempo* of life. Railways were the thing; and the making of main roads came to a dead stop.

Yet still the Grand Trunk Road—having more than justified its existence—pushed on and on; dawdling northward without haste, without rest; a vast experiment that succeeded only through the dogged perseverance of its human builders, defying natural forces and the natural indolence of the coolie-*lōg*. The last was countered often by a strange device hardly to be imagined in any other country: a paid '*shahbāsh wallah*,' whose rôle it was to shout praise and encouragement to his flagging fellows: a form of spiritual stimulant so successful that occasionally it tempted the resourceful Asiatic to practise wiles undreamed of by any confiding British officer.

One such, a young R.E., was told off to repair a bridge; urgent work that needed day and night labour in shifts. To make sure of no shirking he pitched his tent near the bridge, where—in wakeful hours—he could hear the men chanting at their toil. Yet, each morning showed no visible progress. On the third night, puzzled and suspicious, he crept cautiously out of his tent in the small hours; and behold, his gang of night workers, squatting round the camp fire, smoking their *hookahs* and chanting at full pitch of their lungs—'Oh Brother! *Shahbāsh* brother. Pull together—oh brothers!'

On that occasion the form of '*shahbāsh*' applied by the defrauded Sahib was not of a spiritual order.

By the middle 'forties that persistent Road had reached the Punjab, where no railways challenged its supremacy; and there it came under the direction of a promising young

Engineer, Robert Napier, who had already proved his mettle among the hills of Darjeeling. In the Punjab he built a cantonment at Amballa and a new hill station; served with distinction in two Sikh Wars; in '49, when final British victory left Henry Lawrence uncrowned King of the Punjab, he asked for his friend Colonel Napier as Chief Engineer.

Already he had gathered round him the famous group of 'Politicals' known as Lawrences's young men. 'Far from faultless, they differed widely with the individuality of strong natures; yet all shared one essential quality: they feared God, and feared nothing else in heaven or earth.'¹ Sincerely, without exception, they loved Henry Lawrence; and few, if any, stood higher in his esteem, or closer to his heart than Robert Napier.

Thus manned and governed, no wonder the Punjab set the standard of British administration for all India. Years after, when they questioned John Lawrence as to the secret of that early system, he would answer truly, 'It was not our system. It was our *men*.' In other words, it was character—his brother's, his own and their colleagues—that made the Punjab.

With unerring judgment Henry laid upon Napier the stupendous task of changing a war-ravaged wilderness into a flourishing Province of British India; and to understand what that task involved, one must consider the condition of the Punjab in 1849.

Roads, properly speaking, there were none; bridges, none; public conveyances, none; schools, hospitals, jails, none. Ranjit Singh and his Sikh Durbar found it simpler to mutilate offenders and turn them loose, as a warning to others. Thus the whole aspect of the country must be radically changed by Napier, who had ridden all over the Punjab, and knew it as it was known to no other. His splendid Public Works are still the pride of that Province and a model for all India. His great Canal revived dead villages and created new ones throughout its course of 247 miles; and as for roads, within three years the Board was able to report 1300 miles of made

¹ *Honoraria Lawrence* (Maud Diver).

M-1638

roads: 2000 miles traced for making and 5000 surveyed, with the modest addition of a hundred large bridges built and four lesser ones.

But no array of figures, however imposing, can give an adequate idea of the transformation wrought, under Dalhousie's brilliant dictatorship. Never in India, or elsewhere, have changes so rapid and remarkable been made in a newly conquered, utterly undeveloped country; and if the cost of Napier's vast Public Works sometimes appeared excessive to the financial-minded John Lawrence, none had eventually greater reason to bless his Chief Engineer. For along the Grand Trunk Road marched all the Punjab troops and guns that were to help recapture Delhi in 1857.

The northern section of that great Road was now to travel across the new Province, to connect Lahore with Peshawar and form the backbone of the Punjab strategic system.

Napier's first need was to choose a subaltern whom he could confidently put in charge of the works; and already he had found his man. During the recent siege of Multān he had proved many times over the quality of a certain young Alex. Taylor of his own corps, who had conducted a dangerous flotilla journey down the Sutlej to the besieged city, and had shown exceptional steadiness, energy and resource in managing the unwieldy pontoon boats, that must be guided and propelled through the surging, flood-swollen river.

The heat had been terrific, rapids and shallows, rocks and sandbanks and lurking alligators had created endless vicissitudes, sudden and alarming.

In the course of that two-hundred-mile journey the older and the younger man had been drawn into an almost father-and-son relation, that ripened into a lasting friendship. To Napier, Alex. Taylor owed many valuable opportunities of service; none perhaps more valuable, or more keenly appreciated, than this congenial yet terrifying charge of carrying on the Grand Trunk Road through the most difficult section of its whole course.

At the time he was just turned four-and-twenty, with little experience of practical engineering and none whatever of making roads. It was typical of the period and the

method of Henry Lawrence. He never asked, 'Is it possible?' He set great ends before men, and left the outcome to their personal initiative, energy and courage. 'It was the day of subalterns, boys in age, men in character, with the adventurous ardour and audacity of their youth. They learnt how to govern by governing. They learnt how to make roads by making them.' It was on the same principle that Napier—having proved his subaltern friend—did not hesitate to put him in charge of so great an undertaking.

The start must be made single-handed, without lesser roads or maps for guidance. Everything must be prepared, evolved or collected by one gifted, resolute young man. He must be his own draughtsman, clerk, mason, surveyor and traveller. He must raise his own army of coolies, pay them himself and keep complicated accounts for the hardest of taskmasters—Sir John Lawrence. Emphatically here was the chance of his life; and there is no truer service that a senior can do for a promising junior than to give him his chance early in the day. Divided between elation and alarm, Taylor set himself to justify the trust placed in him; and before very long he knew that he had found his vocation. The Road became his passion; and throughout his variously distinguished career he was to be known as Taylor of the Grand Trunk Road.

A photograph of his Delhi statue reveals him as a young man of striking appearance, the fine-boned face and deep-set eyes suggesting his Highland heritage. Young and in robust health, he was never at a loss to solve the teasing problems that were legion on the Jhelum-Pindi Road. Yet, with all his zeal for the work in hand, he was singularly free from personal ambition. A spirit of unworldliness, instilled by early training, was fostered by the example of two chiefs as single-minded as Robert Napier and John Lawrence, who worked always at high pressure and expected as much of those under him. Swift to mark what was done amiss, he seldom failed to give praise where it was due. Also, like Henry, he left ample scope for personality and initiative, always giving that coveted boon, a free hand, to the Man on the Spot.

Such leadership unfailingly imbued the younger men with a devotion to work for the work's sake ; with a sense of being Englishmen of a certain class in a foreign country, very much alive to the implications involved. True, their Calvinistic faith induced a certain spiritual narrowness. Few of them could rightly assess either the stern Unitarian creed of the Moslem, or the profound philosophy of higher Hinduism. In their view a man must be either Christian or Pagan ; and they saw themselves—simply and instinctively—as Christians in a Pagan land, constrained to manifest their belief in principle and in action.

Years after, looking back on those strenuous days, Taylor writes : ' There was a glow of work and duty around us in the Punjab such as I have never felt before or since. I well remember the reaction of feeling when I went on furlough to England ; the want of pressure of any kind, the self-seeking, the dulling and dwarfing lack of high aims. One went back lowered several pegs—saddened altogether.'

And here he was, in 1849, called upon to cleave through the uncharted Punjab this great strategic highway, that was to open up and civilise a country four times the size of Scotland, before the railway, creeping northward, began to steal its traffic. On him devolved all practical details. By him an army of 60,000 coolies must somehow be recruited, housed and paid ; no easy matter that last, since the Road was but one important item in Napier's immense programme that was never to be completely fulfilled.

Cramped, yet undeterred, by his Chief's passion for economy, he carried on his stupendous works ; while his subaltern cheerfully surmounted the hundred and one difficulties of driving a *pukka* road across a *kachcha* Province, without machinery of any kind. Even wheelbarrows were novelties shied at by coolies, accustomed to bearing burdens on their own heads ; and appliances from England might take anything from seven to ten months in transit.

For all that, the Road went steadily forward ; its 270 miles divided into seven sections, each with its Engineer and staff, picked by Taylor, on whom rested full responsi-

bility for the project as a whole. With his amazing grasp of detail, he had the seven sections clear in his brain. And he practically lived in the saddle, as did all his fellows. It was a hard life, but a congenial one, combative and strenuous, full of unexpected adventures. Through the fierce Punjab hot weather—often 120° in the shade—they carried on, cheerful, if perspiring; but it was in the 'cold weather,' with frosty nights and cloudless days, that outdoor work made swiftest progress.

Taylor, living at Pindi—half-way between the Jhelum and the Indus—scoured the whole area and seemed to be everywhere at once. Like most young men of the period he was ahead of his years; very much a man, though in many ways he remained a boy to the end of his long life—'straight as a die, scorning mediocrity, seething with energy and self-confidence, imperious and outspoken—what would now be called a live wire; admired by many, loved by some, and disliked by not a few.'

But before all else the Road—the whole Road and nothing but the Road—made up his satisfying sum of life. For him no other work had quite the same fascination. Year after year, through many hot weathers, he pitched his tent on the sun-smitten plain, near some difficult cuttings or within sight of some great bridge that needed critical attention. Only on Saturdays he would close his Pindi office and ride off alone up into the Murree hills, where Napier had built the first houses of the now familiar hill station.

Relays of horses every ten miles would carry him up and up out of the Punjab furnace into clean, pine-scented air. Twilight deepening to dark, stars and moon overhead, would find him under some stately deodar near a mountain stream, enjoying a simple evening meal before he flung himself, blissfully weary, on a native string-bed with rug and pillow to sleep as men only sleep in the open air.

At dawn he would wake to the tinkle of the stream, the scent of his deodar, the call of cuckoo and dove among the trees, to the more prosaic refreshment of tea, toast and eggs. Then he would fall asleep again, dozing on and off

through the whole summer day, strong sunlight tempered by cool air ; till at sunset he was roused, body and mind renewed, to enjoy his camp dinner and the fifty-mile ride down through the forest under its canopy of stars, back to the stifling office, where he would be found, alert and eager, at his post on Monday morning, ready to meet any demand, any enterprise that might be required of him.

There were welcome interludes also for sport : water birds in great variety, rivers full of fish ; the big Indian salmon (*mahseer*) often weighing over twenty pounds. And Taylor was an ardent sportsman ; ardent in all things, work or play : a piece of human quicksilver ; his high spirits and vitality a tonic to any man who began to feel stale or disheartened by difficulties without end.

In the Punjab, shaken by the clash of great personalities, the Lawrences and Napier unmistakably set a standard that all felt spurred to emulate : Henry with his hold on their spirits and hearts ; John with his single-minded devotion to work, order and method ; Napier with his generous heart, his hand and brain of steel. Between them they managed to gather, and keep, around them a singularly fine and devoted set of men, either akin to them in outlook or aspiring to become so.

But before the gathering storm of mutiny broke over India, Henry had been shifted from Rajputana to Lucknow, and had lost his beloved wife three years earlier. Napier had also left the Punjab, with mingled regret and relief at breaking his official link with John Lawrence. The two men were fundamentally unlike in method, if not in aim ; and Henry's departure had widened the breach between them.

So in '57 there remained only John, with Montgomery for right-hand man. Stalwart, confident, a leader of heroic magnitude, he faced the coming upheaval that was to sweep away the East India Company, wreck the Bengal Army, and plunge Northern India into a welter of massacre and widespread destruction—yet not entire destruction. From the ashes of John Company and the Great Moguls there emerged, in due time, the Indian Empire.

INTERLUDE FOR REBELLION

'Your danger is as you have seen. And I am sorry it is so great. But I wish it to cause no despondencies, as truly I think it will not: for we are Englishmen.'—OLIVER CROMWELL.

IN the spring of 1857, Alex. Taylor's interminable Road was forging ahead through its most difficult phase from Pindi to Peshawar, taking in its stride the mighty Indus, 'Father of Rivers,' that debouches from the hills in a roaring torrent through the narrow gorge above Attock, where Akbar's picturesque stone fort has commanded the ferry since 1681.

Taylor, still living at Pindi—with his bachelor chalet at Murree—was as usual here, there and everywhere along the whole route, glad to find many old friends in Peshawar, where, by luck or fate, Herbert Edwardes was Commissioner, with John Nicholson for Deputy. It was at Ferōzpur, some years earlier, that Taylor had first met Nicholson: a young soldier-political of striking appearance, already recognised as 'a man fitted by genius and character to fill the highest State offices.' Literally worshipped by the rough Frontier tribesmen he ruled, his physical strength and beauty, his gallantry, integrity and ability made an overwhelming impression on all with whom he came in contact.

At that time he and Edwardes had their own local problems to cope with. In fact it seems evident that hardly a prominent man in India—except the uncannily prescient Henry Lawrence—had any clear foresight of the coming event that, for years, had been casting its shadow before. Yet among them there were many who knew that the Crimean and Persian Wars had dangerously denuded India of British troops. These were now in a disparity of 36,000 to 237,000 sepoy, who had not forgotten the disasters of Kabul; and in March Henry Lawrence wrote frankly, 'There is a bad

feeling abroad in the Native Army, due to our absurd system that allows no outlet for ambition. I have preached warnings about this for thirteen years. I hope the Government will mend their ways before it is too late.'

Those fatal words shadowed the whole of his own last brave Lucknow adventure. He himself had been sent there too late. What he did achieve, in the short time given him to prepare the now famous Residency for its coming ordeal, was in the nature of a miracle.

As to the Native Army he was right ; and not as to the Army alone Dalhousie's policy of annexation had alarmed the Princes. Doubt and fear possessed all believers in the higher Hinduism. Dismay shook the hearts of the ignorant, who were told that the British Raj had embarked on a crusade against caste. Ancient loyalties and inarticulate instincts were stirring in millions of hearts. The Englishman, however—unaware of prejudices other than his own—ignored these things.

Early in '57 disquieting symptoms increased for those who had eyes to see, or ears to hear. Yet the astounding fact remains that no British official, civil or military, seems to have imagined the possibility of what was about to happen. All alike were taken by surprise. Even the first risings in Calcutta were treated as local, while the spirit of disaffection spread north-westward to Meerut and the independent kingdom of Oudh.

It was near the middle of May when there came to Lahore a telegram from Delhi that fell upon all like a thunderbolt : 'We must leave office. The sepoy have come in from Meerut and are burning everything. We are off. Mr Tod (head of the telegraph service) is dead. We heard that nine Europeans were killed. Good-bye.'

Thus they knew that the worst had happened ; but not till later did they hear the worst in all its hideous detail.

The great flare-up—secretly prepared for months—had come three weeks before the given date ; the fuse prematurely lit by local passions—possibly by the harsh treatment meted out, at Meerut, to eighty sowars of the 3rd Native

Cavalry, picked men of a picked regiment, who had refused to bite the supposedly defiled cartridge. In addition to the regulation sentence of penal servitude, passed by men of their own race, they were condemned to be publicly stripped of their uniforms before a parade of the whole garrison, surrounded by a mixed crowd, white and brown. Then, one by one, their leg-irons were riveted on to them ; an ordeal prolonged for nearly two hours.

The needless, cruel indignity, that enraged many Englishmen, so enraged their fellow sepoys that the rising fixed for 31st May was forestalled by the horrors of that unforgettable Sunday evening in Meerut. The tragic tale has been told over and over in history and fiction, but it happened eighty years ago—and how quickly people forget.

While church bells called unsuspecting men and women to evening service, sepoys in the Native Lines were shooting their officers and freeing their eighty dishonoured comrades ; some rushing off to the jail, some to civil lines where bungalows were gutted, women and children brutally murdered, with never a deterrent move from Cantonments, not two miles away. The mutineers, virtually unhindered, completed their work of destruction and fled, helter-skelter, from the expected retribution.

'To Delhi! To Delhi!' they cried—and raced on unchecked ; while the Brigadier wasted fine troops in defending his ravaged cantonments against rebels who were busy elsewhere. No pursuit was attempted or, apparently, considered by Brigadier-General Hewitt, an obese and antiquated officer of fifty years' service, who ought long since to have been retired. Pursuit might have been vain ; but even the belated arrival of British troops in Delhi would have changed the whole face of affairs. Instead, the deplorable record stands that the joint inaction of Hewitt and Archdale Wilson, his second-in-command, became responsible for the siege of Delhi, the massacre and bloodshed in Northern India, Oudh and Bengal ; for the death of men like Nicholson, Havelock and Henry Lawrence ; and the destruction of 150,000 loyal sepoys.

Nor was Hewitt the only high official responsible for piling

disaster on disaster. At Jalandhar there was General Johnstone, who let three Native regiments slip away to Delhi, in spite of repeated warnings from Lawrence to disarm them all.

There was the Commander-in-Chief himself, a complacent optimist, convinced that the 'cartridge excitement' would yield to the 'soothing syrup of explanations.' So he and his staff had betaken themselves to Simla, with invaluable British regiments at Sabathu. The startling news from Delhi created a passing panic and sent General Anson down to Amballa, without actually opening his eyes to the terrible truth. Even outspoken letters from John Lawrence—some of the wisest and strongest he ever wrote—emphasised by urgent telegrams, did not take full effect; and while Anson delayed, the spirit of mutiny flared up in all directions. Cholera broke out in his own camp—and he died of it; though it was afterwards said, not inaptly, that 'he died from an attack of John Lawrence!'

No wonder that much-tried man—responsible for the warlike and inflammable Punjab—wrote in exasperation to Lord Canning, 'I assure you, sir, that some of these Commanding Officers are worse enemies to us than the mutineers themselves. I could sometimes almost believe they have been given to us for our destruction.'

In Delhi itself—on that fatal 10th May—it was afterwards told how an unofficial telegram from Meerut was received by the Commissioner that evening, while he sat at dinner; put unopened into his pocket—and *forgotten*. Improbable though it sounds, the fact remains that *some* warning was sent before the wires were cut on 11th May; that the efforts made to keep out the sepoys came too late, like everything else on that day of disaster. No attempt was made to approach the Indian nobles, men of high standing, who would promptly have rallied to the Sirkar; and their retainers might have done yeoman service in checking the first inrush of rebels. But the complete surprise and alarm wrought panic and paralysis at a moment when all hung on swift, cool-headed action.

By nine o'clock every British official had been killed,

women and children cruelly murdered. Anarchy reigned. The few English left alive and the terrified people of Delhi could only pray for 'the cloud of dust on the Meerut road'—that never came.

Within twenty-four hours five thousand rebels had captured Delhi without a shot fired in its defence; and, by the persistent irony of fate, it had been rendered almost impregnable by Robert Napier himself.

That Hewitt was afterwards relieved of his command did not undo the harm done or bring back to life the innocent dead. In the blunt words of John Lawrence, 'The evil caused by General Hewitt's inexplicable delay in marching on Delhi will be felt for the next fifty years.' And, as usual, he was not far wide of the mark.

For the Mutiny—with all its horrors and violent passions on both sides—left a legacy of ill-feeling and misconception, also on both sides, never completely dispelled.

But if Delhi had been taken unawares, all had not been flung away. In Lucknow, Sir Henry Lawrence was doing wonders, with 'his astonishing grip on men'; yet even he was pursued by the prevailing fatality. Everything hung ultimately on the Punjab—on the recently defeated Sikhs and on a group of men hardly equalled in any page of England's story.

If certain incompetent Commanders did seem given to the English for their destruction, the men who held the Punjab—soldiers and civilians—must as surely have been given them for their salvation.

With Sir John Lawrence at Pindi, Robert Montgomery wore his mantle at Lahore, where he proved his quality by a stroke so swift and bold that even Lawrence was taken aback when he heard of it.

Briefly, on the 12th he received the Delhi telegram, with secret information from Richard Lawrence—Chief of Police—that four Native Infantry regiments at Mian Mir were 'in it up to the neck.'

On the 13th—at a general parade—the sepoys of those four regiments were ordered, without warning, to lay down their arms. Followed a brief hesitation, fraught with dire

possibilities if the order were not obeyed. But unmasked guns and instinctive response to a work of command just turned the scale. Four regiments quietly laid down two thousand rifles and seven hundred sabres : the whole Indian garrison disarmed without a shot by three British companies. More : a hundred men were promptly rattled off in country carts to Amritsar ; and there again rebellion was forestalled.

Within forty-eight hours of hearing from Delhi both stations had been saved from the fate of Meerut, Ferōzpur strengthened, Multān and Kāngra warned : an achievement worth recalling to a generation that has forgotten these things—if it has ever known them at all.

To John Lawrence, at Pindi, racked with anxiety, the news brought such immense relief that he wrote off to Montgomery in a burst of unwonted enthusiasm : ' Your Lahore men have done nobly. I should like to embrace them. All are *pukka* trumps '—his highest word of praise.

With high confidence also he could look towards Peshawar. No malign fate there ; no incompetent General, but three of the finest ' Lawrence young men ' : Herbert Edwardes and John Nicholson, with Neville Chamberlain as Brigadier to Sydney Cotton, who commanded the garrison. Lawrence had originally refused Nicholson's urgent request to serve under Edwardes on the score that he could not have ' two top-sawyers in one station ' ; but glad enough he was to have them so in the hour of crisis. All three were men with whom to think was to act. Nicholson alone was ' worth the wing of a regiment ' in any evil day.

At Nowshera, not twenty-six miles away, was young Alex. Taylor still hard at work on his Road ; while John Lawrence at Pindi had all the strings in his powerful hands. On him it fell, during those three critical months, ' to sweep his great Province with searching glance, holding it with his iron grasp and inherent force of character ; to stimulate every enterprise, direct every movement of troops from the gloomy portals of the Khyber to the Ridge before Delhi.'

At the outbreak—so sudden and startling, so mismanaged by the higher commands—the outlook was undeniably sinister in a Province where 10,000 British troops must deal with

36,000 sepoys, most of them mutinous, or likely to become so on the first opportunity. To meet that danger Lawrence had but one dictum: 'Trust all Sikhs—their Princes and Sirdars. Distrust all sepoys. Disarm them all at once.' None too easy for the ten thousand to disarm more than three times their number; but courage and high resolve make all things possible; and eventually every suspected regiment was disarmed, in most cases, as Lahore, without a shot fired.

Lack of rapid communications gave men everywhere the authority to act promptly on their own initiative: thus revealing many fine examples of what can be done through sheer force of character, unhampered by waiting for orders or fear of responsibility. Among those so placed was none readier than John Lawrence to say with Meredith—

*'I take the hap
Of all my deeds. The wind that fills my sails
Propels; but I am helmsman.'*

When the Delhi news reached him he was prostrate with neuralgia and a half-blinded eye; yet next day he despatched in all directions 'a masterly batch of letters, extraordinary alike for their quality and quantity,' proving himself complete master of the situation—not in the Punjab alone. His imperial spirit ranged far beyond his own youngest Province to the whole Indian Empire. 'How he worked, how he planned, what wide views he took was known, in a measure, to all his fellow workers and all who studied the history of the Mutiny.'¹ His famous sentence written to General Anson deserves to be re-quoted in connection with present problems: 'Reflect upon the whole history of India. Where have we ever failed when we have acted vigorously? Where have we succeeded when led by timid councils?'

Of those last there were none in the Punjab. 'Action—action!' he insisted again and again. 'Do something to show you are not afraid. . . . Inaction at Meerut lost us Delhi. Inaction at Delhi may lose us India. . . . Dangers

¹ *Life of Lord Lawrence* (Bosworth Smith).

thicken round the man who hesitates ; and the price of one man's hesitation is often paid for in other men's lives.'

Never was a truer statement penned. Nor did he weary in his constant exhortation to 'take wide views' ; not only to consider local emergencies or immediate dangers, but to grasp the whole desperate situation : to act—act with promptness and decision.

His one driving thought echoed the cry of the mutineers : 'To Delhi—to Delhi !' At all costs and as soon as possible, the lost city must be retaken ; but there must be no risk of losing the Punjab. Sikh Chiefs and Sirdars had power in plenty to embarrass the British ; yet—thanks to the fair dealing and consideration of Sir Henry Lawrence—they preferred to help their former enemies : to range themselves with the four Sikh Rajahs and their followers, 'whose fidelity and heroism, by the side of their conquerors, lights up a dark page of Indian history.'

Henry Lawrence, who left half his heart in the Punjab, left also an aftermath of his spirit to animate the youngest, the most warlike, yet most trustworthy of the Provinces ; 'every man of which was now in his right place, upheld by complete confidence in the ever-anxious, yet never despondent John Lawrence. One and all they increasingly believed that if the impossible could be done, by him it would be done.'

Everywhere along the Frontier, British officers were working in full accord with the ruling spirits at Pindi and Peshawar ; but the unpunished massacres at Meerut and Delhi shook the foundations of British prestige ; and the sky darkened from hour to hour. Yet those ruling spirits at Pindi, Peshawar, Lahore, never seriously doubted the issue ; and the resolute mind generates decisive action.

First they must disarm the Province, before their few vital British troops could be sent elsewhere. For if British rule collapsed in the Punjab, all Northern India would be submerged. Yet the stubborn fact remained that troops and supplies emphatically must reach Delhi before the monsoon hampered large-scale movement ; and there was then only one direct route available—Alex. Taylor's Grand Trunk Road.

When war threatens, the engineer, working in the background, has his reward. By 1857, years of unremitting toil had produced two hundred miles of metalled road, not yet complete by any means, but a reliable link between Lahore and Delhi. That road was presently to be guarded and kept open by the four Protected Chiefs of the Punjab—Patiāla, Kapurthala, Nabha, Jindh—while column after column of regiments, ammunition and stores travelled safely down to the Delhi Field Force: 'A signal instance of Asiatic honour upheld in the face of unparalleled temptation.'¹

Down that road also tramped Henry Lawrence's Corps of Guides on their famous march from the northern wilds of Hoti Mardan. Five hundred miles they covered, under the blazing sun of an Indian June, in twenty-two days, with only three halts for rest by special order; a march unequalled anywhere, under such conditions, in point of speed. Yet they arrived 'light of step, light of heart; proud of their mission, their leader and their march. . . . And they were welcomed, as well they might be, with ringing cheers.'² To crown all, half an hour after their arrival, they went straight into action.

They were only the vanguard of reinforcements that Lawrence was presently to send in a swelling stream down Taylor's Road, till the day came when he could at last give the coveted order to Captain John Nicholson: 'Go down to Delhi—and take it.'

Taylor himself, craving for active service, must perforce carry on his Road from Pindi to Attock where the mighty Indus joined by the Kabul River cleaves its way—as described—through 'the gorge of black slate; rushing through the narrow channel at a speed of twenty miles an hour. The roar and foam of those maddened waters are things to see and hear—and remember. . . . Cliffs above them black as ebony, white as marble or brilliant orange varied with yellow sand and green bushes at the mouth of many ravines.'

Taylor, kept strictly to his important non-military work, was tantalised by distorted rumours; gleaned chance

¹ Sir George Lawrence.

² *The Story of the Guides.* G. Younghusband.

fragments of fact from Nicholson, Edwardes or Neville Chamberlain, as one or other galloped from Peshawar to Pindi and back again on some urgent errand. At sundown he would ride into Attock Fort, where he found congenial spirits, all consumed with one ambition—to reach Delhi and join the camp on the Ridge.

Only one taste of exciting action came his way on 20th May—and he made the most of it.

Visiting Attock that day, he heard that a detachment of Native Infantry, joined by mutineers, had gone off towards Nowshera, clearly intending to rouse the whole garrison, loot the magazine, cross the Kabul River and make for Hoti Mardan—held by their own regiment in the absence of the Guides.

Here was his chance. Off he galloped across country, reached Nowshera before the sepoy, smashed the boat-bridge over the Kabul River, scattered the ferry-boats, dispersed the oarsmen, and fully enjoyed the dismay of the foiled mutineers, who must either swim the river or give up the game. Several essayed the crossing, and were drowned. A Native Cavalry regiment brought out against them, refused to act. So a certain number did manage to reach Mardan and seize the fort; but their plan to stir up a wholesale rising had been scotched by one resourceful subaltern, to the huge delight of Edwardes and Nicholson in Peshawar.

There the Border tribes were now flocking in with offers of service, impressed by Edwardes' bold if painful step, of disarming three Native Infantry regiments on parade. Till then the Pathans had been standing aloof, waiting to see how the white man would handle a dilemma of the first magnitude.

'They had not calculated,' wrote Edwardes, 'on our having so much pluck. Now they are eager to fight for the obvious masters of Peshawar.' Men were even coming in from the Miranzai region, that had only been subdued a few months earlier, and was now, in Edwardes' phrase—'as quiet as a Bayswater tea-garden.'

But although the Punjab held its own, the whole outlook

in June was dark with foreboding. Province after Province in the north-west flamed into open rebellion. The small British force sweltering on the Delhi Ridge was too weak in numbers and in siege equipment to attempt a full-scale attack on 15,000 rebels strongly entrenched in a city fortified by a prince of engineers.

To send down help would be a slow affair at best, and would dangerously denude the Punjab; while the rebels were being daily reinforced by disciplined soldiers and armed villagers. For a brief while even John Lawrence fell into a mood of despondency, aggravated by overwork in hot-weather conditions.

And still Taylor hopefully awaited the coveted order that came not. Work on the Road languished in June. Every officer who could be spared went off on leave; and Taylor returned unwillingly to his office at Pindi, unaware that he had already been commended to his Chief by no less a person than Nicholson himself, who was working wonders with his movable column; stamping out sparks of mutiny in all directions; taking his own line of action, even when it clashed with orders from Lawrence; virtually saving the Province, that must soon be dangerously stripped of British troops and artillery, because another spineless General at Delhi kept asking for more. At last there seemed no choice but to despatch Nicholson and his invaluable column, strengthening his hand with the rank of Brigadier-General.

News of his departure quenched Alex. Taylor's last lingering hope of reaching Delhi. Utterly disheartened, he arranged to go off salmon fishing, with a friend, some twenty miles from Pindi.

Before leaving, he rode out to inspect his works, and so chanced to meet Thornton, Commissioner of Pindi, who greeted him with the question: 'What are *you* doing here? You ought to be at Delhi.'

To which Taylor answered ruefully: 'John Lawrence won't send me. Someone *has* to get on with this Road.'

And off he went to catch salmon, while Thornton resolved to have a word with the great man.

His mention of Taylor came aptly at a moment when

Lawrence had just heard from Delhi that the Chief Engineer—yet another Hewitt—had been recalled for obvious reasons. That ill-chosen officer had arrived in camp with a Persian wife and a train of twenty camels bearing all her belongings : clearly the last man to command the important Engineer brigade at a time of crisis. He was to be replaced by an admirable officer, Colonel Baird-Smith, R.E. ; but there would also be need of others in that line. So Lawrence, knowing his man, said briefly, ‘Send Taylor to me.’

Taylor, of course, was nowhere to be found. Inquiries and search discovered him, at last, knee-deep in his salmon river. Promptly he galloped back to Pindi, half in hope, half in fear that he was only ‘in for a wiggling’ through exceeding his estimates—the unforgivable sin.

He was not left long in doubt.

‘I want you to go to Delhi at once,’ was all that Lawrence had to say. ‘Can you start to-morrow?’

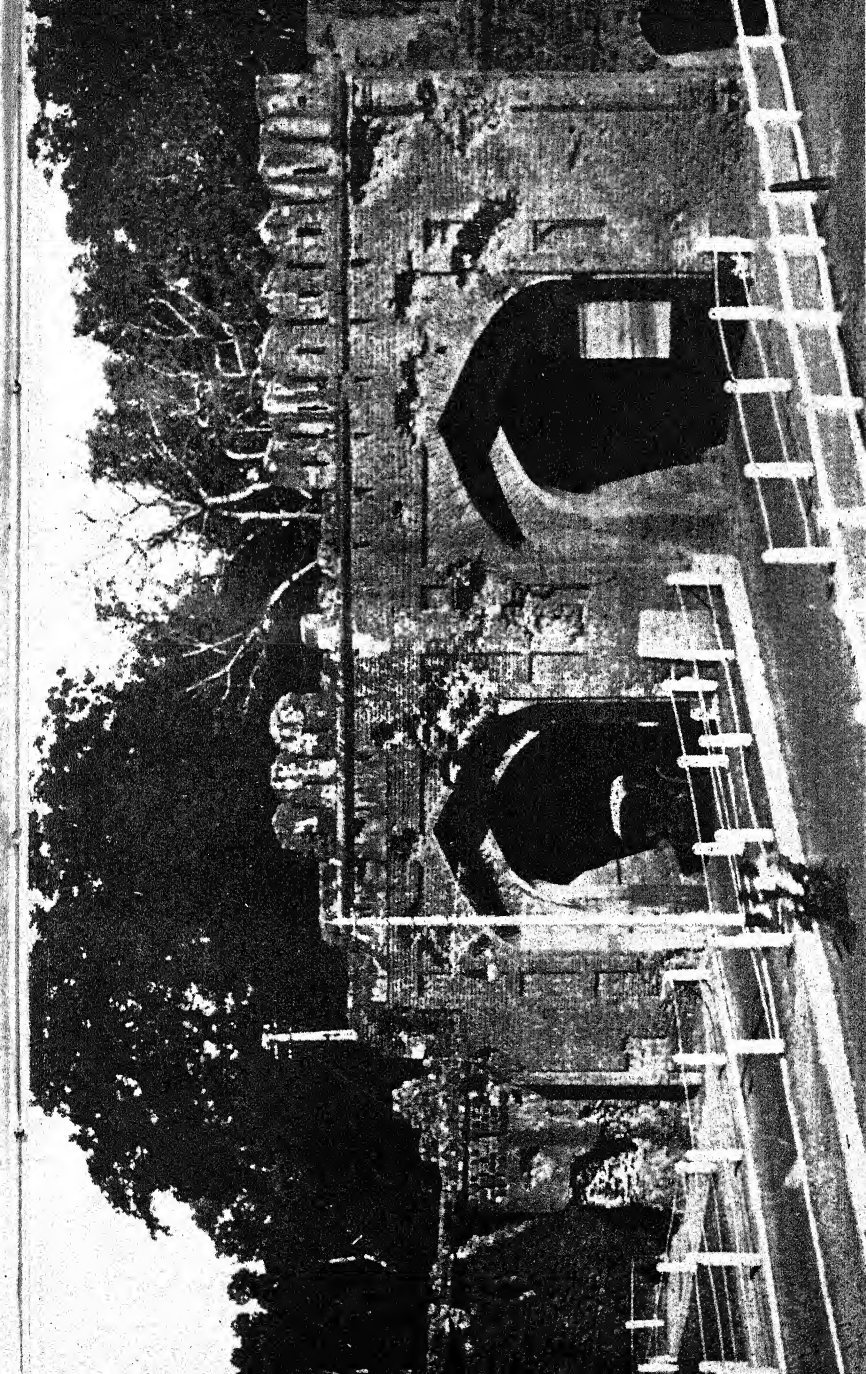
‘*Can I?*’ He could have started within the hour ; but there was need to hand over his Road, to collect a few essentials, borrowing shirts from one friend, a sword from another.

Thus equipped—not even a pistol—he drove off next day, with two other young officers, in a dog-cart, scarcely able to believe in his good luck.

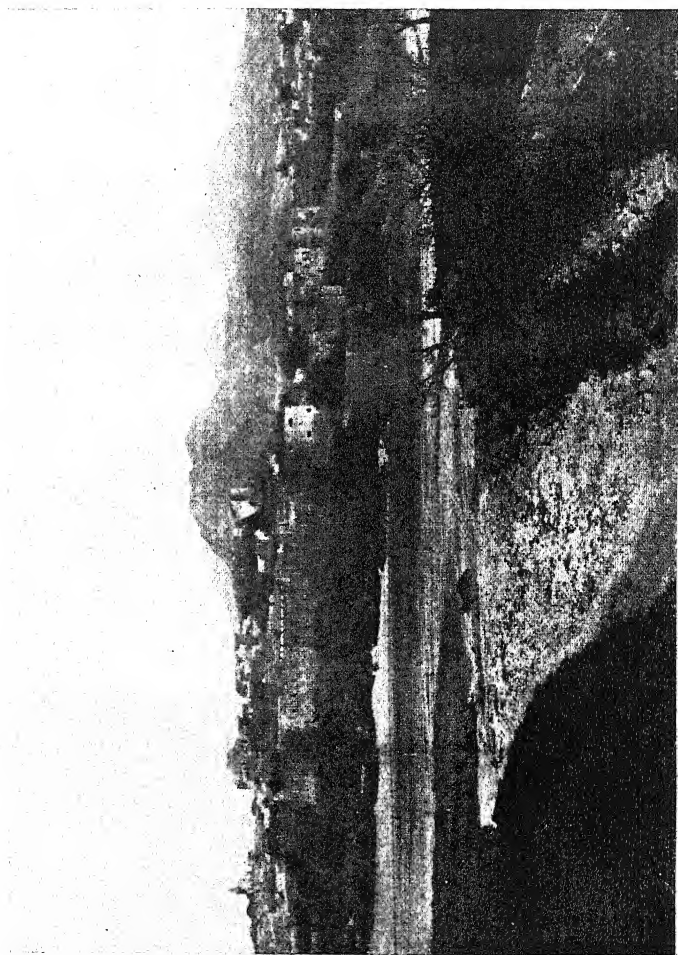
From Lahore they went on by mail-cart ; and in forty-eight hours—driving all night and most of the day—they had covered a hundred and eighty miles of Taylor’s half-completed Road. Finally, they commandeered horses and rode on to Delhi, having traversed the whole five hundred miles in five days and nights with the Punjab furnace at its fiercest.

At last his consuming ambition was fulfilled : he had reached Delhi.

From the high platform of Flagstaff Tower he surveyed the scene soon to be associated with danger, excitement and adventure, brave laughter, brave endurance of the worst that July and August could do : heat, rain-storms, fatigue, sickness and bad nursing ; worst of all, the stench from



The Kashmir Gate, Delhi.



Attock.

unburied bodies of men and animals, the incurable plague of flies.

The Ridge itself, stretching obliquely across the northern city front, is nowhere more than ninety feet high. Between its two wings of rock ran the Delhi Canal and the Punjab Road. Behind it lay the camp and ruined cantonments, which it partially protected. The city wall was nearly seven miles in circuit; two miles of it lying along the bank of the River Jumna. The northern front of little more than a mile ran from the Water Bastion, past the Kashmir Gate, to the Mori Bastion.

This was the only possible front for attack, the British being still too weak in numbers to attempt investment. They were themselves virtually the besieged, combating almost daily attacks and alarms. For the rebels had occupied suburbs and gardens outside the city. All the scales seemed weighted in their favour: fifteen thousand against five, and their numbers daily increasing; no lack of artillery or ammunition; their shadow emperor still keeping up the semblance of a Court in his palace overlooking the river. Rose-red walls and huge battlements, sheltered palaces and mosques, among the most beautiful in all India; and above the low outer wall, with its loopholed parapet, blossomed the domes and minarets of the Jamma Masjid—clear in the dawn, dark against the smouldering glow of a hot-weather sunset.

In the camp itself Taylor found plenty of soldierly material, but little sign of vigorous leadership. According to General Barnard, 'the whole thing was too gigantic for the force against it'; which, in one sense, was true enough. Without a siege train, they had not sufficient weight of guns to carry out the tremendous task expected of them by Lord Canning and Sir John Lawrence. Yet if Delhi were not soon taken, what of ten thousand English women and children behind them in the Punjab? That grim question made the doubts and hesitations of semi-invalid Generals almost unendurable.

Though six weeks had passed since the horrors of Meerut, no single plan of operations had been thought out or provided

by the deplorable Chief Engineer. He initiated nothing. Indeed he practically abdicated his functions, without protest from the General who relied on him.

Mercifully, before worse befell he was replaced by the gifted and spirited Alex. Taylor till the coming of an able Senior Officer, Colonel Baird-Smith.

Meantime Taylor virtually commanded the brigade ; and, from the day of his arrival, he infused new life not only into the Engineer Department, but into the whole force. Bright, loyal, generous, as resourceful as he was brave, he soon became beloved by the whole camp, more especially by the younger men of his own corps. 'No sooner did he arrive,' writes one of them, 'than affairs assumed an entirely new complexion. At last we had a real Engineer of works. In a very few days he won the complete confidence of us subalterns. We would have followed him anywhere.'

For that brief period of actual command he was given full scope to exercise the transforming power of personality. All knew of his record in the siege of Multân ; and very soon he began those daring reconnaissances into the enemy's positions which were to become his speciality.

He took up his quarters with a score of other young engineers in a ramshackle bungalow ; and although their hearts and bodies did not escape the pangs of that testing time, their boyish high spirits remained unquenched—unquenchable. Taylor, at thirty-one, was the eldest of them, the rest being in their early twenties ; 'accomplished all-round men, every one of them, men of clear intellect and good courage.'¹

Heat, sickness, wounds, anxiety, overwork, failed to dishearten them. At times, the whole cantonment resounded with music. There were many singers, far too many enthusiastic performers on flute and cornet. The Engineers even raised an instrumental quartet. They dined on a billiard table, with its edges sawn off. In spare time they lay head and tail, like sardines, under their one improvised punkah, reading and writing and cracking perpetual jokes ; liveliest always when things are at their worst.

¹ Lord Canning.

Taylor, luckier than some of his fellows, was eventually followed by his faithful servants from Murree, bringing the clothes and wine and stores that he had written for on departure, but had scarcely expected to see again. His servants were all hillmen, fearful of far journeys; and their precious loads must be carried, without convoy, through five hundred miles of disturbed country.

But the Sahib's orders were sacred. So one August morning he returned to camp at 9 A.M., after five hours of early work, to find 'a white-robed salaaming bearer announcing, "The Sahib's bath is ready"': no allusion to any long journey or interval of time. His tent was ready pitched; grass blinds hung in the doorway; flies driven away; a steaming bath prepared, and a change of linen laid out on his camp-bed. He was going to 'live like a Sahib again!' Gaiety and courage so invincible seemed a guarantee of ultimate victory; for the rock against which the sepoys hurled themselves was not of stone, but of indomitable spirit, flesh and blood.

Yet resistance, however heroic, would never take Delhi. The need was urgent for a plan of attack and a General who knew when to take those risks that hold the secret of success.

The General had yet to arrive; the plan of attack existed already in the mind of one brilliant young Engineer. To the perfecting of its endless details and to acquiring a practical knowledge of all it involved Taylor devoted every hour, day or night, that could be spared from his normal round of work.

'I am never off duty,' he wrote in evident enjoyment; and the full account of his many daring exploits—examining all points of vantage held by the enemy—must be read in the vivid story of his life by his daughter, Alicia Cameron Taylor. In addition to exceptional peril and fatigue, there was need for absolute secrecy even from his fellows, who gleaned information for him or worked out minor details of his unrevealed scheme. Only two officers in the force really knew anything of the design behind his many activities: Colonel Baird-Smith—when he took over the

Sapper command—and the man whose coming was to transform the whole camp—the young Brigadier-General John Nicholson.

It was on the 8th of August 1857 that a jolting mail-cart brought John Nicholson to join the much enduring little army that had gallantly repelled five times its numbers, yet had failed to capture Delhi.

He had hurried on ahead of his Columns for consultation with General Wilson, whose doubts and anxieties were casting a shadow of depression, tinged with impatience, on his high-spirited troops. Again he had been pressing Lawrence for more British regiments. The Punjab Chief—having sent his last available man and gun—had answered bluntly that he could spare no more. Delhi must be taken—and that speedily—by the troops already supplied. 'Every day's delay,' he wrote, 'is fraught with danger. Every day adds to the risk of the Native Princes taking part against us. Even in the Punjab we are by no means strong.' In spite of that he was sending them now his strongest and best; one who had already proved his genius for war; and the news of his coming had produced an electrical effect on the whole camp.

At once he went off alone round the picquets, examining every one of them with searching questions. Not many of them even guessed his identity. To most of the force he was known only by name and by his high reputation as a leader. But what they all thought or said of him mattered little to one whose mental stature matched his whole impressive aspect. 'Cast in a giant mould, with massive chest and powerful limbs, an expression ardent and with a dash of roughness; features of stern beauty, deep-set hazel eyes, long brown beard and a sonorous voice. There was an air of immense strength, talent and resolution in his whole bearing, a power of ruling men on high occasions of which none could fail to be aware.'¹ An unconsciously imperial air made him seem older than his thirty-four years and was apt to antagonise men of lesser quality; yet it clothed a

¹ *Life of John Nicholson* (Captain L. Trotter).

genuine modesty and warmth of heart that made him beloved by men of equal stature ; respected and admired—often unwillingly—by all. To Indians, who worship strength and fine breeding, he seemed little less than a god. It was a Sikh who said of him, ' He should be a King ' ; and there was truth in that just appraisal.

Yet this man, whose powerful, insubordinate sense of individuality often embarrassed his seniors, could write of Henry Lawrence to his loved Herbert Edwardes, ' If it please Providence that I live through this business, you must get me alongside of you again and help me in following his example. I am so weak and unstable that I shall never do any good of myself.' This was a side of Nicholson known to few ; and to those few it was sacred. Certainly none who worked with him—least of all those who resented his dominant air—would recognise in that flash of self-revealing one who was a match for John Lawrence in an almost aggressive self-reliance. Yet there was Lawrence himself writing, ' Men call me John the Rigorous ; but in truth I am John the weak.' Both great leaders possessed the defects of their Ulster forbears : a religious faith, in many ways narrow and hard judging, which did yet produce characters of rare integrity and virility coupled with genuine tenderness of heart.

Supreme among these was Nicholson—' General by the Grace of God '—who rode into camp, like a king coming to his own, and virtually took command of the whole force. It was his will that dominated the General ; his leading that the Army was prepared to follow. Yet was he but a Company's Captain ; and in camp there were Colonels of Dragoon Guards, of Lancers and 60th Rifles, not one of whom felt superseded, or demurred at the prospect of serving under Brigadier-General John Nicholson—a magnetic leader of men.

He found the Delhi camp alive with the spirit of brave adventurous youth ; but he also found himself allied with a General whose good qualities as a man did not include the soldierly elements essential to the critical task in hand. The over-anxious Barnard, having died of cholera, had been

replaced by General Archdale Wilson—a curious appointment in view of the fact that Wilson had been implicated in the fatal Meerut policy of inaction and partly responsible for the loss of Delhi.

So far, he had at least brought order and discipline where there had been much laxity ; but too soon it became evident that he was 'not the man for the job.' Bold in actual fighting, he was pessimistic in council ; and, at that time, physically unfit, having lately recovered from smallpox. Sickness everywhere in that unhealthy season was taking its toll of officers and men : two thousand in hospital and few of the others at their best.

Happily both Taylor and Nicholson were in exuberant health ; their minds and bodies equal to any demand on them. The excitement of the life and the importance of the issue kept Taylor on the crest of a wave, elated at the coming struggle, which would test their manhood to the utmost. And that struggle was to be based on a plan of his own devising : a plan at once daring and cautious—the Scots and Irish mingling that made him an ideal leader for any desperate venture. No wonder 'the younger Engineer officers swore by him.'

While the whole camp fretted against inactivity, these two men of genius, of iron will and physique, were between them forging the weapons of victory ; and from Lahore Lawrence was writing to Henry Norman, 'Every day's delay adds to our difficulties. Every day more regiments are breaking out. Before long we shall have no Native Army left.'

For all that, there were thousands who remained 'true to salt.' Out of Nicholson's four thousand, only a quarter were British troops ; but their leader was worth at least another thousand. And now, at last the long-awaited siege train was dragging its ponderous length of five or six miles along the Grand Trunk Road. Its approach could obviously not be concealed from the rebels in Delhi ; and on 25th August it became known that some six thousand of them with sixteen guns had left the city, bent on intercepting the one thing needful to British victory.

Here was Nicholson's opportunity ; and he rose to it in his own brilliant fashion.

Next day, before dawn, he marched out with two thousand five hundred men of all arms, in a torrential downpour that lashed the ground into a very swamp : men and horses—the guns often up to their axles—floundering through it in hot semi-darkness. Only a Nicholson—or a Chamberlain—could have led troops out in such weather. But the time factor was everything ; and wherever he led, men would follow. A Gunner officer tells how, in places, they had to wade through water right up to their saddles ; but they beheld ' Nicholson's great form riding steadily on ahead, as if nothing were the matter, and felt sure that all was right.'

For twelve hours they pressed on, through bog and rain and spells of scorching heat, before they caught up with an enemy entrenched in a large building, with strongly held villages on either side. But the tired troops responded with a will to Nicholson's resolute leading, his genius for daring a risk at the right moment.

Boldly he attacked a large serai, the enemy's strongest position. First a shattering bombardment ; then the eager infantry dashed across two hundred yards of mud and stormed the place with deadly effect. From a short sharp struggle they emerged victorious, drove the surprised rebels across the canal bridge and captured the guns before they could be carried off.

In less than an hour they had routed twice their number ; seized guns, ordinance, baggage, and were only checked by darkness from pursuit of a fleeing enemy. That night they must bivouac, foodless and shelterless, with only the glow of victory to warm their chilled bodies.

Next morning elephants came out from camp to bring in the wounded and the weariest, the rest marching back with thirteen guns for trophy.

After more than two months on the Ridge this was the first disabling blow struck at the mutineers ; and the whole camp was filled with admiration of the new Brigadier. Lawrence himself, in the midst of harassing work, wrote

from Lahore, 'I wish I had the power of knighting you on the spot.' All Nicholson's praise was for his men, their *elan* and steadiness after a demoralising march.

From that decisive day the rebels ceased from troubling in front or rear. It was sickness, the destroying angel—fever, dysentery, cholera—that killed or disabled more than the most persistent enemy. Yet spirits ran high, for the siege gun was rumbling daily nearer; and on 4th September it rumbled into camp, drawn by elephants. There were also bullock-carts, laden with shot and shell; better still, there were fresh troops, greeted by the garrison with cheer on cheer. At last they saw hope of an attack that could hardly be discouraged by their hesitant General, who was now almost in a state of collapse. Colonel Baird-Smith—ill himself—was fairly exhausted from the strain of dealing with a Commander whom he reckoned 'almost as much an obstacle to be overcome as the walls of Delhi or the bayonets of the enemy.'

Finally, between the cross-fire of urgent letters from Lawrence and blunt words from Nicholson, Wilson saw himself committed to action; and his final message revealed his deplorable state of mind. 'I disagree with the Engineers entirely. I foresee great, if not insuperable difficulties; but as I have no other plan, I yield to the urgent remonstrance of the Chief Engineer.'

Thus implicitly he thrust upon Baird-Smith the responsibility for failure or success of an attack that he chose to regard as a gamble.

Nicholson, made of sterner stuff, was growing fiercely impatient of the General's incapacity for so great a venture. His soldierly mind, while it grasped the whole critical situation, was completely unshadowed by forebodings.

To Lawrence, with serene assurance, 'The game is completely in our hands. We only need a player to move the pieces. Fortunately Wilson—after even threatening to withdraw the guns and abandon the attempt—has made everything over to the Engineers; and they alone will deserve the credit of taking Delhi. Had Wilson carried out his threat of withdrawing the guns, I was quite prepared to

appeal to the Army to set him aside and elect a successor. I have seen lots of useless Generals in my day ; but such an ignorant, croaking, obstructive as he is, I have never met. . . . I believe the Meerut catastrophe was more his fault than Hewitt's. . . . He is allowing the Engineers to undertake operations simply because the Army will no longer put up with his inactivity.'

Thus, between them, they overcame the main human obstacle to action ; and then at last did Alex. Taylor—after countless daring exploits—find himself free to initiate the greatest one of all.

He and John Nicholson, from the first, had instinctively recognised each other as men of like temper and daring ; one in the fundamentals of all great character—courage, integrity, ardour ; typical Irishmen of Scottish descent ; both upheld by the true heroism that is unaware of itself. Their whole relation to each other in those last weeks of Nicholson's life revealed his character in new light. 'Bravest of the brave, rashest of the rash, his devotion to Taylor made him nervously, even amusingly anxious lest he should expose himself to needless danger.' He, of all men, insistently preached caution to his gallant friend ; yet, for lack of it, he lost his own life.

In the stress of arduous work and their self-dedication to one end, chances of personal companionship were infrequent ; but their talk at such times was intimate and turned often on religion—Scots as they both were, in spite of Irish birth and Irish mothers. Sheltering behind a ruin or a rock, while shells crashed and bullets 'pinged' overhead, they would drink claret together and discuss free will, predestination, salvation, faith and works.

In the words of Taylor's daughter, 'My father adored Nicholson. They understood one another and were happy Paddies together ; two high-spirited passionate idealists, for whom life, at the moment, had small value apart from the great venture to which both were dedicated ; both leading spirits of that final triumphant yet tragic assault on Delhi.'

Nicholson studied with enthusiasm Taylor's boldly designed

plan of attack, seen and approved by Baird-Smith, who was too ill for active exploits ; fortunate in having so gifted and resourceful a Second-in-Command.

The opening move, a most dangerous one, was the need to occupy an enemy post oddly named Ludlow Castle, which Taylor himself had visited in August—at imminent risk of extinction—secretly and alone.

Now—with Nicholson to back him—he announced that before he could begin to build breaching batteries, the big house, Ludlow Castle, must be occupied. From his own experience he made bold to state that, by careful timing, the place could be taken out of hand.

Wilson flatly refused to believe that a post so vital could be so carelessly held. He frankly doubted whether Taylor himself could ever have made the rash experiment. He insisted on further proof: a demand that could not be supplied.

Taylor possessed a potent ally in John Nicholson, who promptly backed the venture, and offered to explore Ludlow Castle with Taylor that very night. Well enough he knew that on Taylor's life and his own hung issues of the first importance ; that neither ought, by rights, to be perilously prowling in darkness outside the camp. But Taylor's assertion must be verified ; and the adventure itself demanded the precise blend of resolve, recklessness and prudence native to both.

So at midnight they crept secretly out of camp ; and Taylor triumphantly took Nicholson right into Ludlow Castle, which they had the luck to find unoccupied. Unhindered, they examined the surrounding gardens and returned in safety from ' a stealthy exploration as romantic and irregular as any episode in modern warfare.'

It cut away the ground from under Wilson's feet ; and it led to the swift, successful capture of the big house, the rebels being completely taken by surprise. It raised the spirits of men and officers, though nearly half their number was in hospital and the reinforced enemy—some 40,000 strong—was safely entrenched within the walls of an almost impregnable city.

The hour was at hand ; and none but the sceptical Wilson doubted the result.

But four breaching batteries had yet to be built, with utmost secrecy, in the dead of night. It was Taylor's great moment ; mind and body braced to the utmost ; and throughout he had the backing of Nicholson, coupled with that of his chief, Baird-Smith.

From now on, the Sapper camp was a scene of excitement and incessant activity ; Taylor leaving nothing to chance ; everything foreseen organised, rehearsed to the last detail, in weather conditions aggravated by the exceptional heat of early September and a blinding, choking dust-storm, liker to May or June.

At last, on the 7th September, Taylor and his Sappers entered on their herculean task, to build No. 1 Battery between dusk and dawn, with platforms for six guns that were to pound the Mori Bastion, and a 'wing' to hold 24-pounders that would discourage sorties from the Kashmir Gate.

It was a stifling night brilliantly lit by stars and fireflies and, at ten o'clock, a rising moon. Even in darkness the heat was a burden. Only the excitement of working against time kept everyone up to the mark. Moon and stars looked down on a scene of confused movement : 'hundreds of camels arriving, dropping their loads and returning ; hundreds of men busy as bees, unloading carts full of shot and shell ; huge guns drawn by twenty bullocks each ; Sappers, Gunners, Infantry all mixed up with that congested mass. . . .' Yet everyone knew his part ; everyone was doing it. Men and officers worked like Trojans, well aware of what the day would bring forth. As fast as a platform was ready, guns must be dragged into position. It was a task for Titans ; and, in spite of the tireless Alex. Taylor, dawn found them with a completed battery and stored ammunition, but only one gun hoisted on to its platform.

There had been erratic fire during the night ; and at sunrise the new-made Battery stood revealed—a mark for round after round of musketry fire and cannon.

Through it all, officers and men went doggedly on, placing

other platforms and guns ; no pause till all was complete, and No. 1 Battery fired its first salvo on the Mori Bastion amid cheers from their fellows, who had collected on the Ridge.

The erection of that Battery in a single night—a feat unsurpassed in Engineer annals—was not only a triumph of character over circumstance, but a triumph of foresight and skill. If all had not been so carefully organised and rehearsed, no resolve, no courage or energy could have accomplished that night's work.

And there were yet three more to build before the attack could be launched. No. 2, the great breaching Battery—already traced—must be set up before Ludlow Castle, five hundred yards from the Kashmir Bastion. It was decided that not less than three nights would be needed for its construction ; and their time was limited. Night after night they laboured in moon-splashed darkness ; day by day fresh wonders were revealed, more guns began to pound the walls. The night of the 11th produced a Third Battery—in the planning of which Taylor surpassed himself—a hundred and fifty yards from the Mori Bastion, where now a statue of the builder keeps guard for all time.

By the 12th, fifty guns and mortars were in full play, reducing two bastions to utter ruin.

The tension of that long—yet all too short—week, from Monday to Monday, was unforgettable. Delay threatened peril or failure ; and on none did the knowledge press more urgently than on Nicholson and on Taylor, 'who virtually directed all siege operations from first to last.'¹ Only his brother officers knew how heavy was the responsibility that devolved on him. 'Mounted on a cob worthy of its rider, he galloped, under a burning sun, from Battery to Battery. Wherever danger or difficulty beckoned, there he was sure to be found—the heart and soul of every movement ; never sparing himself, inspiring, aiding, animating all by his noble example. . . . He never complained, never faltered ; almost it might be said he never rested. Eighteen hours out of the twenty-four he spent at the front ; returning to

¹ George Medley, R.E.

his tent so worn out that once his bearer found him fast asleep on the ground, a few yards from the bed he had been too tired to reach. "A little sleep, a little wash, a little change," and he became his untiring self again.¹

With him, as often as not, was John Nicholson; the two heroic spirits drawn, during those few weeks, into an almost brotherly devotion. Taylor himself wrote: 'General Nicholson passed the greater part of every day with me on the works to give me the benefit of his authority. . . . Any movement of troops I needed he immediately arranged; thus ensuring rapid action. He was also in constant touch with Baird-Smith. We all worked together in perfect harmony.'

Perhaps none realised more fully than Nicholson the responsibility laid on Taylor's shoulders; the perfection of detail packed into a plan of assault that could hardly fail of success. He knew also that the essential secrecy of Taylor's preparations, the petty jealousies of small-minded men, might prevent his vital part in the siege from being as recognised as it deserved to be. Men carrying on safely, in offices at Headquarters, would criticise those who worked at the front in hourly danger, or complain of unavoidable delay.

It was on some such occasion that Nicholson—always hot against injustice—paid his famous tribute to the younger man whom he ardently admired and loved.

'Well, if I live through this,' he informed them all in his ringing tones, 'I shall let the whole world know who took Delhi—that Alex. Taylor did it.'

¹ *Life of Sir Alex. Taylor*, by A. C. Taylor.

3

FRUITS OF VICTORY

'One equal temper of heroic hearts.'—SHAKESPEARE.

INDIA itself had been won and held in defiance of all the laws of war; and of Delhi much the same might be said. The taking of that famous city—in its way a miracle—followed upon a twelve-weeks' siege, 'the most memorable in British annals.' The northern line of wall, with its two bastions, could be threatened only by four batteries, amply manned and equipped; the walls to be breached and the bastions pounded by Taylor's fifty-four guns.

On the morning of the 12th, at a given signal, the bombardment began in earnest; and cheers rang out from the Ridge as bastions crumbled and yards of parapet were torn away. Not a moment's respite, for the next forty-eight hours, from the whistling of bullets and roar of guns. Exhausted gunners—replaced by volunteers—would fling themselves down for a brief, profound sleep; then with vigour renewed, would spring up and at it again. The coolness and courage of Sikh gunners, picked out by Lawrence, matched that of their British fellows. The endurance of *bhistis*, and of native servants bringing food to their Sahibs, surpassed all expectation.

Not until the night of the 13th came the eagerly awaited order, 'Assault at Dawn': a signal of death for many of those who welcomed it. All were to assemble at Ludlow Castle; and Nicholson was to lead the first storming column. A golden future opened out before him. He had been told he was to lead the pursuit; and Lawrence had already appointed him Commissioner in the Punjab. When he spoke of it to Daly of the Guides, the soldier said at once, 'You won't need to take *that*. You'll become a General and get a Division.'

'General of a Division!' Nicholson's haughty laugh spurned the suggestion. 'You think I'd prefer that? *Look* at them! Look at the Generals!'

A sweeping, but not unnatural retort, in view of his late experience.

None who beheld him that morning, at the summit of his powers, could have believed that his vigorous and valuable life was so nearly at an end.

Omens, at the start, were unfavourable. The dawn attack was unavoidably delayed. Breaches made in the walls had been partly closed by the rebels under cover of night. So eager assaulting columns must lie down and cool their ardour, while the roar of an artillery duel rent the air and wasted valuable hours of darkness.

With their nerves at strain the troops waited, till a silver radiance lightened the east and the sun, like a flaming sword, leapt from the scabbard of night.

Each of the four attacking columns had its part assigned in a programme as masterly as it was bold, for a small force defying one of the first rules of war—that the besiegers of a fortified town should outnumber the besieged by three to one. In Delhi the proportion was ten thousand against forty thousand; and only three thousand out of the ten were British troops.

Taylor, as assaulting Engineer, was attached to Column One under Nicholson, who had been told only at the last minute that his command virtually included Columns One and Two. This belated information entailed a few urgent words with Brigadier Jones of Column Two; and characteristically, it was Taylor whom Nicholson chose to leave in his place: Taylor, whose plan of attack was now being put to the test. He further added that, if the signal to advance should be given before his return, Taylor was to lead the first storming column.

That signal was given by Nicholson himself; and thus it befell that the assault was actually led by Taylor, who believed—not without reason—that his magnanimous leader had intended to give him the honour which was his due. Through such great-hearted acts of generosity Nicholson

won 'the love, verging on adoration, with which he was regarded by his brother officers.'

On this occasion, returning from his interview, he left Taylor in the post of honour, while he himself took over a wing of his own column.

On a sudden, the thunder of artillery ceased. With a resounding cheer the 60th Rifles skirmished off to cover the assaulting columns. At the signal they also sprang forward, each column to its appointed breach, in full sunlight, under a shower of bullets, men falling right and left, none able to stay and help the wounded ; Nicholson himself striding on ahead, 'unhurt, unheeding, as if death itself could not prevail against him.'

Across the glacis they sped and leapt into the ditch, where scaling ladders were set up and hurled down and set up again. Over they went at last, leaving behind them a tragic pile of dead and dying.

Now the two first columns were on the ramparts, clearing them of rebels ; bullets, thick as locusts, whizzing over them. In the triumph of that wildly exciting moment the cheers were so deafening that officers could hardly make themselves heard.

Then from the Kashmir Gate came a mighty explosion : signal that the 3rd Column had entered the city—by what a deathless exploit could not then be known.

Columns One and Two (Nicholson and Jones) now parted company : Nicholson to clear the ramparts as far west as the Lahore Gate, Jones to take and hold the Kabul Gate.

As they separated, a mixed body of some thousand officers and men raced, leaderless, along the ramparts and down a narrow lane below them, chasing a demoralised enemy right away to the strong Burn Bastion near the all-important Lahore Gate, overlooking the Chandni Chowk, Delhi's famous Silver Street. One of them, young Arthur Lang, R.E., vividly tells the tale, with its deplorable climax.

'On we rushed, cheering and shouting, swept by storms of shot from side streets and musketry from house-tops, officers and men falling fast. It was exciting to the verge of madness. . . . The air seemed full of bullets. I wondered

how much longer I could tear on—unhit. We took tower after tower, gun after gun, never stopping—till we nearly reached the Lahore Gate, when a gun-mounted barricade caused a check.'

Even so they pushed on, rebels fleeing before the tide of British and Indian troops that had overflowed their ramparts. England's star was in the ascendant; and that little party—unaware of disaster to Column Four—might then have carried the day.

Fatally, at that moment, they were caught up by their leader, Brigadier Jones, who seemed to have lost his bearings.

'Where have we got to?' he asked Lang; and was told that his victorious troops had swept him past his own objective, almost to the Lahore Gate that was Nicholson's goal.

He had, in fact—to his evident dismay—'exceeded instructions.'

'We were all shouting for advance,' wrote Lang. 'But not a bit. We could only get permission to hold our ground': a dismal order for men drunk with excitement and success.

Checked in full career, they were condemned to cool their heels in doorways, or cower behind buttresses, while the street was swept with grape, man after man picked off by sharpshooters. Gradually, inevitably, they 'nursed a panic.' Officers, who had carried them forward, could now only do their utmost to stave off actual flight.

In less than half an hour the worst befell. Their men, sweeping past them, headed back to the Kabul Gate.

Brigadier Jones, by his unsoldierly halt, had flung away a brilliant opportunity that might have retrieved Major Reid's disaster and saved the life of their inspired leader.

Too late—the eternal refrain—he perceived his mistake and made a futile effort to seize the Lahore Gate. But ardour had been chilled and his numbers reduced. The enemy had returned in force and barricaded the road. Half a dozen desperate attacks were whipped back with loss on loss.

The rising tide had turned.

Reid's Column Four was in full retreat down the Grand Trunk Road, a multitude of rebels in pursuit. Column

Three, under Colonel Campbell, waited anxiously at the Jamma Masjid for co-operating troops—that never came. Nicholson himself had been delayed an hour and more, near the Kashmir Gate, making arrangements with Alex. Taylor for a defence base at that angle of the city. Then, forming up a small body of the stormers, he went off to rejoin his column.

Turning, as he rode away, he called back to Taylor, 'I am sorry not to have you with me'; and Taylor—sharing his regret—could not know that he was never to hear that friendly resonant voice again.

By the time Nicholson reached the Kabul Gate—hampered everywhere by the devil of delay—two invaluable hours had passed since the victorious assault on the still unconquered city. The men under Jones were tired, hungry and disheartened by that senseless, exasperating check when all was in their hands. Jones himself had dire news to give of Column Four, foiled in an almost impossible task. Major Reid, wounded early in the day, had been let down by his Kashmiris, who had bolted at sight from a horde of mutineers.

Between them and the dire indecision of Jones, the morning's costly triumph had fallen far short of victory. Delhi, valiantly assaulted, had not yet been taken.

The major struggle for the Lahore Gate, the Jamma Masjid and King's Palace, still lay ahead. But for Jones, Nicholson might have found half his work done, thus enabling him to join up with isolated Column Three and capture the Palace by nightfall. As it was, he found only a flag planted on the Kabul Gate, held by a spiritless residue of his two first columns. With these he must, at all hazards, seize the Burn Bastion and Lahore Gate—or face defeat.

Two hours earlier his magnetic leading would have carried the day. Once again—it was too late. To his fellows the double achievement seemed now not humanly possible. An extremely narrow lane, leading to the Lahore Gate, hugged the city wall. Its windows and roof-tops bristled with riflemen. From the far end, it was swept by guns loaded with grape; and beyond them loomed the Great Burn Bastion, built by Englishmen, capable of holding a thousand

rebels. Till it was taken, there could be no firm grip on the city.

But his own men were 'played out' physically and morally. Since midnight they had been on the alert, had experienced the tension and excitement of the assault, had cleared more than a mile of ramparts under heavy fire. Disheartened by their fatal check, exhausted with sultry heat and lack of food or drink, they had little spirit left for his culminating call on their courage and endurance. Added to these was the British soldier's innate distaste for the unsportsman-like nature of street fighting.

All that Nicholson knew. He had worked throughout like any soldier; yet, in body and spirit, he towered above the best of them. Judging others by himself, he demanded the virtually impossible of that fine corps the 1st Fusiliers; the 75th to charge along the ramparts and carry the position from above.

'Officers to the front!'

With a rousing cheer they carried their men forward, seized and spiked the first gun; 'nothing could surpass their heroic contempt of death.' Their Commandant, first to fall, shouted to them in his final agony, 'Go on, men! Go on!'

And they went on.

From the second gun they were hurled back almost leaderless. They had done what they could. But there were others to meet the imperative need. And there was Nicholson himself, a titanic figure; his voice like a bugle-call, bidding them 'Come on!'

Instinctively they wavered. Threat of death confronted them from every window, every house-top.

Then Nicholson knew it was a case for leadership rather than command. Still a Captain, he had not yet learnt to be a General. Impatient, indomitable, he sprang forward, his sword unsheathed, and swung round facing them with that commanding gesture, calling to them again: 'Come on, men! Come on...!'

Still, for an instant, they wavered; then, to their horror, they saw him reel round and fall, mortally hit by a shot

from the Burn Bastion, which he had resolved to take at all costs.

An orderly sergeant caught him as he fell, and laid him in a recess partly sheltered from fire. But when they would have moved him, he resisted. He would lie there till the city was taken; still convinced that it must be taken that day.

At last, though protesting and faint with pain, he must perforce let them carry him back to the Kabul Gate; and Brigadier Jones—of all men—reigned in his stead.

The fallen leader could only be sent in a doolie to the field hospital, but none could be spared to go with him; and it has been told, by Roberts himself, how he found that doolie, with its precious burden, dumped down by the roadside, its bearers having run off in search of loot.

Lifting the flap, he beheld his admired leader, exhausted from loss of blood, 'with death written on his face.'

'I am dying,' he said simply. 'There is no chance for me.'

And Roberts, heart-broken, saw that he spoke truth. In his own words, 'Other men had daily died around me . . . but I never felt as I felt then. To lose Nicholson seemed, at that moment, to lose everything.'

So must the whole Army have felt in that dark hour; not least, General Wilson, riding into Delhi with his staff and greeted by news of disaster on all sides. Sixty officers and a thousand men killed or wounded; the city stormed, but not yet captured; his 'tower of strength,' John Nicholson, wounded unto death.

It was news that might have shaken the stoutest heart; and Wilson—a man of many good qualities—lacked the resolute spirit that alone can wrest victory from disaster.

The whole British position had certainly never been more perilous than it was on the evening of their great military success; but Wilson's unsoldierly impulse to withdraw the guns and fall back on the Ridge till supports arrived from the south, was flatly vetoed by every member of his staff. They recognised, if he did not, that the early success, though incomplete, had been decisive. The moral effect must not be lost by any blundering step backwards.

And there was Baird-Smith at his elbow, cool and determined as ever. To the fatal question, 'Can we hold on?' he answered briefly, 'We *must* hold on.' There was Neville Chamberlain, still laid up with his wound, backing the Chief Engineer. As for Nicholson—stricken yet inflexible—when the General's egregious suggestion reached him in hospital, he exclaimed, with a flash of his old fire, 'Thank God, I have enough strength left to shoot that man—if necessary.'

And the camp, with untold relief, heard no more of a backward move.

Alex. Taylor himself, unobtrusive hero of the day, remained perforce in Delhi, where there was urgent work for him and his Engineers if the daring assault were to be crowned by victory. No record remains of what he must have felt when the dire news reached him that Nicholson had fallen in a superhuman effort to achieve the impossible: no record of any brief return to camp for a sight of his wounded leader and friend.

His place was in the city, where opposition was proving more stubborn than any had foreseen; and the British troops temporarily were out of hand after months of courage and endeavour and the day-long strain of battle against odds. To a section of them, half mad with thirst, large stores of beer, wine and spirits had proved fatally irresistible; and operations were checked perforce till the effect wore off.

Taylor, left in charge of defence arrangements, carried on to exhaustion point and beyond, hampered as he was by scarcity of Engineer officers: two-thirds of them dead or wounded. By nightfall of the 14th he was completely 'played out.' 'Since the 7th he had been at the front, with little respite, day or night, his highly-strung nerves on the rack; brain and body driven by a passionate energy that flung itself with cold fury against any and every obstacle; surged against it, overleapt and swept it away.'

Now, after an almost sleepless week, weariness overwhelmed him. Returning to his tent, he slept—as only the young can sleep—on and off for some seventy hours. After that he came to life again, ready for his immediate task—

the complete capture of Delhi. For the city was not yet taken, nor the valiant Nicholson conquered by the pain and exhaustion of his wound. It seemed almost as if his iron will could force even death to stand aside till the news he confidently awaited should assure him that his life had not been given in vain.

During those nine days of weakness and acute suffering, he seemed singularly detached from his own physical condition ; his clear brain concentrated on one thought, one desire—to know how things were going in the city.

‘ Though talking was difficult and forbidden by his doctors, he persistently asked questions, criticised, offered advice and even dictated letters to his friend Herbert Edwardes.’ To Lawrence he wrote frankly begging him to supersede Wilson and give the command to Chamberlain, whose courage, coolness and self-forgetfulness had been beyond praise.

Already, wounded as he was, he had taken over charge in Delhi, on the tactful plea of giving the General a rest ; while Taylor and his few remaining engineers went ahead with their completion of conquest.

To avoid street fighting, he decided on occupying many large deserted houses in their own grounds, filling the windows and roofs with sharpshooters. Through the medley of small buildings between them his men must ‘ sap ’ a sheltered way : an unpleasant task that soon dispersed the occupants and sent rebels by the hundred streaming out of Delhi. But while they held the Burn Bastion and Lahore Gate, the Palace and Jamma Masjid, victory tarried.

Once more Taylor’s versatile genius solved the problem. He would capture other large deserted houses close to the Gate and Bastion, so as to overlook all approaches : a plan approved by authority. But it was mainly through the influence of Henry Norman, D.A.A.G., that he found himself finally in command of six hundred men. These promptly assaulted and captured thirty large houses with trifling loss. By sunset they had possession of two so close behind the gorge of the Burn Bastion that the enemy departed in haste ; and the British were in possession soon after dark.

That important seizure—‘ not least among Alex. Taylor’s

great services'—increased the exodus from Delhi and cheered even the despondent Wilson. It confirmed Nicholson's former statement—repeated even when he lay dying—'Remember to tell them that Alex. Taylor took Delhi.'

It now only remained to rush the Lahore Gate, to make straight for Jamma Masjid and the Palace.

Swiftly and effectually the thing was done.

Before dawn on the 20th Arthur Lang and 'Little Bobs' were out sapping through houses and yards, till they came to anchor in a large room overlooking the Street of Silver, not fifty yards from the Lahore Gate. Taylor coming up with his own party found the street empty, but for a few sentries; and the Gate itself was seized almost without opposition.

Then came the cry, 'To the Palace!'—last stronghold of rebellion. Its main entrance, the Delhi Gate, was blown up by Lieutenant Home, R.E., one of the heroic few who had survived the Kashmir Gate explosion, and when smoke had cleared away, the troops rushed in, 60th Rifles with Punjab Infantry—and the Palace of the great Moguls was in British hands.

But the Shadow King and his court had long since fled to the tomb of Humayun, a huge building, almost a city, several miles from Delhi. Those that remained offered no opposition; and Taylor's party thankfully escaped from the carnage that followed.

Reaction from prolonged strain, with its inevitable depression and disenchantment, laid a chilling hand on them.

Next morning, at sunrise, British guns fired a royal salute from the Palace, announcing to their world that Delhi was a conquered city; conquered by British youth and valour, by the spirit of leadership in Nicholson, Chamberlain and Alex. Taylor.

Sick and wounded on the Ridge heard that salute and thanked God that the long strain had ended in victory. John Nicholson, in the bungalow to which they had moved him, knew it for the signal that his own secret duel with death was over. When a messenger from the city brought

him the great tidings, he said simply, 'My desire was that Delhi should be taken before I died; and it has been granted.'

After that it seemed as if his resolute spirit loosened its hold on the tormented body. In two days he was gone from them; and news of his death darkened the triumphant hour with a universal sense of tragedy. Delhi had fallen—but at almost too high a price.

'It did not sound like a victory,' wrote Edwardes, who loved him as David loved Jonathan; and Lawrence—who had found his match in the most powerfully insubordinate of Henry's young men—wept when they told him that Nicholson was dead.

'We have lost many good and noble men,' he wrote later. 'But none of them compare with Nicholson. He was a glorious soldier.'

That was the simple truth.

His quiet burial service, a day later, was attended only by a few sorrowing friends, foremost among them, Neville Chamberlain. No cannon saluted the heroic dead; no musketry, no solemn music. The sadly diminished army had too much urgent work on hand for bestowing military honours even on their foremost leader; and he—the hardest working of them all—would have preferred the heart's silent tribute of his friends.

He was gone, who seemed so great; but the essence of the man lived on; the power of his personality, widely attested by the impression he made on the young men of his day: 'an impression of unconscious majesty, at once immediate and indelible, so that neither the separation caused by death nor by time could remove it.'¹ And like Sir Henry Lawrence he is revered by men of both races in India to-day.

Sir John, in his Mutiny report, did not hesitate to affirm that without John Nicholson, Delhi could not have fallen. The same might equally have been said of himself and the Province he daringly denuded to that end.

'The Punjab alone had done the work. Not a man had

¹ *Forty-one Years in India* (Lord Roberts).

come from England ; and except the small contingent from Meerut as from Sind, not a man, not a rupee, not a grain, had come to Delhi from the rest of India.' ¹ To Lord Dalhousie Lawrence wrote frankly, ' We have had a terrible time. . . . Had the storming of Delhi not succeeded all must have gone. To Nicholson, Alex. Taylor of the Engineers and Chamberlain the real merit of our success is due. . . . John Nicholson from the moment of his arrival was the life and soul of the Army . . . and Alex. Taylor—only 2nd Engineer before Delhi—was really the officer who designed and arranged all the scientific operations that led to the success of the assault.'

Yet, as honours came slowly through from England, men looked vainly for his name on the lists. Sir Harry Lumsden wrote, in chivalrous protest, ' Will England *never* learn to recognise the right men ? ' And Chamberlain also felt that official recognition tarried unduly. ' As for Captain Taylor, we are more indebted to him for the result of the short siege than to any other individual ; but who will ever know all the services he rendered ? '

Few ever did know. The full tale of his Delhi achievements remained unsung till after his death. But he always received, in full measure, the only recognition he prized—that of his fellow workers, and friends.

None of these paid him a higher tribute than Sir Frederick Maunsell, R.E., who wrote with authority from personal experience : ' I was one of the senior Engineers at Delhi ; and I can frankly say that not one of us was capable of doing what Taylor did. Compared with him we were nowhere. His was the mind that conceived the Plan of Attack ; his the mind and body that carried it to a successful conclusion. Untiring in energy, unsparing of himself he was, in fact, the hero of the siege ; and the common saying that " Taylor took Delhi " is demonstrably true.'

With the fall of Delhi fell the last hope of the mutineers. Rebellion was crushed at its centre. Fortifications built by British Engineers, the arms and ammunition they had collected, the troops they themselves had raised, disciplined

¹ *Life of Lord Lawrence* (Bosworth Smith).

and armed, the inherent strength of the Mogul capital—all had failed to withstand that heroic onslaught.

Yet there still remained the long-drawn siege of Lucknow before men could say, 'It is over.' Taylor himself—tardily raised to the rank of Colonel Taylor, C.B.—had yet to do and suffer great things in the final relief of Lucknow; but the Delhi experience and achievement fitly closes the most famous period of his life.

BACK TO ROAD AND RAILWAY

*'What wouldst thou have a great good man obtain?
Place, titles, salary or gilded chain?
Greatness and goodness are not means, but ends.'*

—COLERIDGE.

THE spring of 1858 found Taylor once more in England, on eighteen months' furlough after fifteen years of Indian service; a normal time of absence at that period.

Landing at Newhaven he broke his journey to Ireland at Ashburnham Vicarage to give the family news of their eldest daughter, his Pindi friend, Mrs Graham. There he was welcomed as a 'Delhi hero' by a bevy of English girls in full crinolines, more alarming to a shy man than a whole regiment of Indian rebels. Women had played a very small part in his life; but he was not too shy to fall in love with one of them—Mrs Graham's younger sister, Lily Munn. On May Day, 1860, he married her; and in October they sailed for India—back to the Punjab and the Grand Trunk Road; Taylor's earlier appointment having been kept open for him by Sir Robert Montgomery at the request of John Lawrence, who was also back in England—the man of the hour.

Young Mrs Taylor, prostrate with sea-sickness, was thankful to reach Calcutta, where scenes of gaiety were followed by a slow-paced journey up-country and a Christmas house-party with Montgomery at Lahore. Thence to Pindi they travelled on 'Taylor's Road,' as it was now known throughout the Punjab; and with them went a sister whom Taylor—having asked her to join him—could not bear to disappoint on account of his marriage.

In Calcutta he had refused two high military posts, welcome recognition of his Delhi services. The way of advancement had its own natural lure; but 'to desert the Road for

preferment,' wrote his daughter, 'seemed to him almost a par with deserting his wife for a richer woman.'

She herself now discovered, with an amused shock, that her husband's life was no longer ruled mainly by her wishes. Back in his kingdom he must inspect every mile of the Road with utmost care. The ladies in a buggy, he and his Assistant on horseback, they would travel leisurely for half the day and spend the remaining hours in some primitively furnished rest-house. Even there the work went on. The two men, absorbed in plans and estimates, left the ladies free to sit in corners, discreetly silent, or, if they preferred, on boxes in their bedrooms. Joyfully, he once more took the reins of the whole concern into his strong, autocratic grasp. For him every mile of the Road held memories of struggle, or of triumph achieved with inadequate machinery and untrained labour, with John Lawrence thundering, 'Reduce the estimates!'

Section by section, bridge by bridge, the great highway had crept along its difficult northern reaches; each section, when completed, taken into use without any opening ceremony as in later days. There seems to have been no thought of any such climax to achievement. An austere devotion to the work, an inherent distaste for any hint of self-advertisement pervaded the Punjab during those decades that may aptly be called the Lawrence period. It implied no conscious superiority to the most natural of human desires. Certainly Taylor's tendency to shrink from honours and plaudits was purely instinctive. As he saw it, he and his staff were gentlemen, who naturally did their bounden duty to the utmost. What call for kudos or rewards? There was no puritanical thought of refusing honours fairly earned; but the principle, as such, tended to inspire that 'glad self-oblation of unnumbered Englishmen, in the Victorian era, who devoted themselves and their abilities to the general weal and to the fulfilling of imperial necessities that were often on a scale unimagined by their countrymen at Home.'¹

At times, the distaste for public demonstration was perhaps pushed a shade too far, as in the case of Taylor's simple yet

¹ *Life of Sir Alex. Taylor*, by Alicia Cameron Taylor.

impressive memorial to John Nicholson. An obelisk of blue-grey limestone, two hundred and thirty feet high, it was set upon a curious islanded hill at the top of Margalla Pass, a long spur jutting out from the Murree range. There, in lonely dignity, it towered above the highway as Nicholson towered above even the great men of his time. It commanded wide prospects : north-west to Peshawar and Hazara ; south-east towards Pindi with its mountain background ; south-west to Kohat, Bannu and the whole frontier region for ever associated with the man of whom it is still said by local tribesmen that ' the sound of his galloping horse can be heard from Attock to Peshawar.'

The creation of such a monument might well have been marked by a gathering of all who held Nicholson in honour—British officers and civilians, wild tribes and Punjab Chiefs. It has even been suggested that ' the union of these diverse elements in a generous common enthusiasm might have done more to join hearts and bridge gulfs than years of benevolent rule.' But, to those most concerned, a public tribute seemed alien to the spirit of the time and of Nicholson himself, ' so high above praise, so disdainful of bunting and tinsel.' To Taylor, above all, it seemed fitting that the hill-top needle should lift itself solitary against the sky—a lasting symbol of one who had always led the way, who had lost his life while leading the way into that lane of death, vainly exhorting his men to ' Come on !'

For three years after his return to India Taylor was once more absorbed in the strenuous work of the Lahore-Peshawar Road, now covering nearly three hundred miles : all his faculties concentrated on the difficult problem of bridging or tunnelling under the mighty Indus near Attock Fort.

When Akbar built it and set up the original ferry, with two hundred picked boatmen, he gave them the monopoly of that dangerous water traffic and wisely attached them to the spot by grants of land still held by their dependants. So the Attock boatmen remained masters of the ferry—one of the most famous river reaches in the world. Hardy, intrepid, and water-wise, they were inured to the buffetings

of wind and wave ; and in Taylor they found precisely the right brand of Sahib ; one who, like themselves, had command of the river that was almost their god ; who treated them as personal friends and built boats for them that would carry them over torrent and flood. Above all, he achieved a feat seldom attempted even by the bravest among them.

For a long time he had set his heart on swimming across the river a little below the ferry, defying whirlpools and rapids against which neither man nor boat could prevail. It was to be no impulsive display of gallantry. The cautious Scot in him tempered always his Irish love of danger. He enjoyed a risky venture for its own sake ; but he played to win, not to fling away his life in a display of bravado.

So he carefully studied every aspect of the river ; its way with the logs that he flung into the rapids and with the few boatmen who had dared the feat.

The critical area was in mid-stream, where ridges of rock created whirlpools like ' gigantic glassy mushrooms,' hollow centred and laced with foam. Below them the stream raced madly towards a clear backwater on the other side. So far, no white man had ever risked the perilous venture. Why should not Alex. Taylor give them a lead ? It was clearly a question of non-resistance ; of keeping a steady nerve : and, having decided that the thing could be done, he resolved to do it.

With one of his Assistants he was rowed to the edge of the whirlpool. There the younger man's courage failed him. So Taylor leapt alone into the swirling waters. Resistless as a log, he was violently tossed up and sucked down again and again, till the whirlpool flung him out battered and breathless, just able to swim through a racing flood to the backwater that was his goal.

The boatmen, who watched him, exclaimed in admiration at a feat that was told and re-told among them for decades to come.

Since then, a few other expert swimmers have dared the whirlpool and rapid ; but Taylor gave the lead.

That was in his early bachelor days, before Delhi. Now

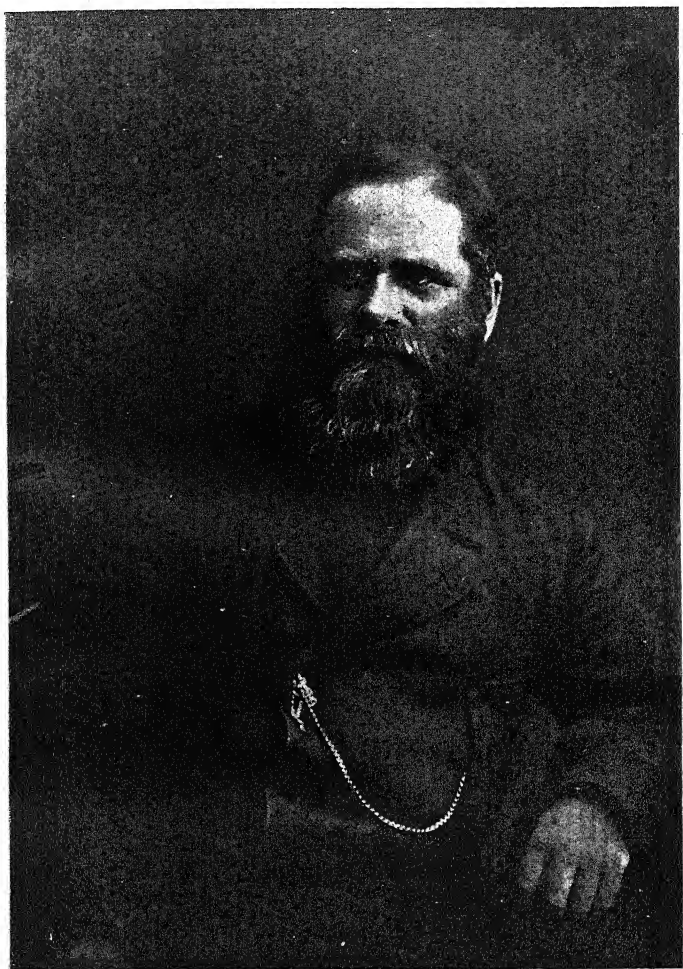
he came back to his kingdom, after sounding heights and depths of soldierly experience, with a wife up at Murree ; his youth of heart, mind and body, responsive as ever to the call of high adventure.

His most daring feat in that line was an episode on holiday with a younger friend in Kashmir, seeing the valley in its unspoilt beauty. Before very long, hours of lazing on lakes began to pall. He craved some exciting form of descent to the plains ; and he found it in a little-known river—the Poonch—that flows downward from Kashmir in a precipitous course among wild hills and gorges. From report, it was described as an impossible succession of snarling rapids and foaming cataracts that fell sheer into rock-bound pools—precisely the kind of spree that Taylor could never resist. By good luck he happened to possess a little leather-covered wicker canoe, also a water-wise friend in one of the head boatmen of Attock. To his long-suffering wife he wrote for the canoe. To his Attock friend he said, ‘Come’—and gladly, proudly, the boatman came. The cockle-shell came also ; and the two adventurers set out on their hazardous journey.

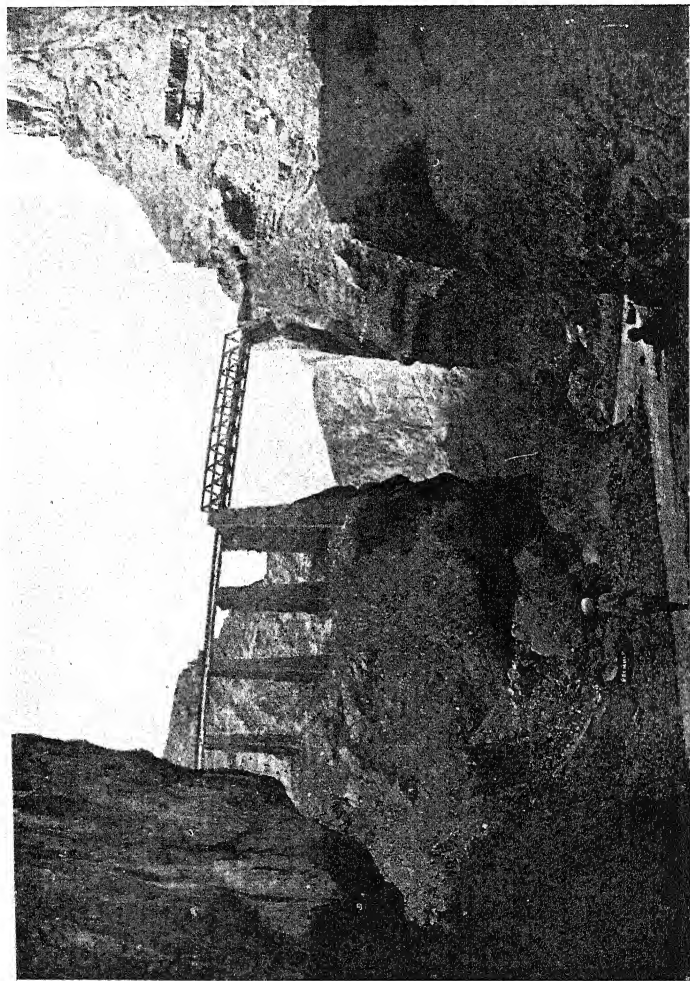
‘Down and down they were carried by the rushing stream, plump over cascades, along wild rapids, through echoing gorges ; always in absolute ignorance of what the next plunge might reveal ; depending entirely on their nerve and coolness, their power of quick decision. Soaked, breathless and battered they reached Tangrot, immensely pleased with themselves and their exploit.’

Whether or no a married man over forty was justified in taking a needless risk of the first magnitude was a point not likely to be argued by Taylor himself, and whatever his wife may have thought about it, she could only thank God when he came unharmed through his perilous trip. That was his idea of enjoyment ; and his holidays were few enough.

The Indus-Attock road confronted him and his staff with one of their stiffest problems : how to replace the old ferry



General Sir James Browne, R.E., K.C.B., K.C.S.I.,
as a Captain.



Louise Margaret Bridge : Harnai Railway.

and bridge of boats by a permanent bridge, so as to make the Grand Trunk Road a continuous thoroughfare. During his absence a scheme, of which he entirely disapproved, had been planned for tunnelling under the river. In the end his judgment was vindicated and the costly failure abandoned ; but in the early 'sixties his Assistants were still valiantly tackling the impossible.

Among these the most notable was young James 'Buster' Browne, a Bengal Engineer of two years' service, independent and unconventional, as arresting in appearance as in character. His exceptional power, mental and spiritual, was rooted in a profound religious faith. His intense feeling for music, that almost changed his career, remained a joy and a solace to him through life : altogether a subaltern of unusual quality and promise. Yet, to most of his fellows, he then seemed little more than a jovial and humorous 'good sort,' game for any mad prank, and as a mimic hardly to be excelled. With his ear for music went a remarkable ear for languages—which largely accounted for his influence with all Pathans, whom he came to understand as few Englishmen have done. He was actually the first British officer to qualify in their language. It is told how he would sit between two tribesmen, each talking a different dialect of Pushtu unknown to the other, and act as interpreter between them.

Venturesome and original, he found life on the Border very much to his taste : an atmosphere of vigour, simplicity and constant hard work ; association with a people singularly responsive to his high spirits and keen sense of humour. His command of their language revealed to him much that is hidden from the average British officer ; and he possessed in full the qualities most appreciated by Indians—courtesy, courage, sincerity and straight dealing. Above all, he was a born comrade. In any work, involving danger or hardship, he would take more than his share. He would join the wild tribesmen round their evening watch-fires, share their meal and learn to sing their ballads—the one white man among them. Yet always he upheld his own high standard of conduct, thus winning both their friendship and respect.

Inevitably Alex. Taylor was quick to perceive in him the very qualities that Napier had earlier recognised in himself: the enthusiasm, the tireless energy and engineering genius. Recognition was mutual; and a lasting friendship sprang up between them. Both lived for their work. Both enjoyed every facet of life with a quenchless vitality of mind and body. Both understood and loved Indian human nature, especially on the Border; though even Taylor could scarcely excel Browne's gift for getting out of his men a maximum of work with a minimum of pressure. 'More flies are taken by molasses than by vinegar,' was the motto he acted on with striking success.

Taylor gives an amusing sample of the way it worked when Browne was building a difficult bridge over the Bara River seven miles from Peshawar. Chief among many obstacles was the river-bed of deep, unresisting mud, that gave and gave and could firmly hold nothing—more disheartening to work in than any rock. Even the patient coolie-people flagged in the unending task of excavation that never seemed to excavate. But Browne—seldom at a loss—devised a form of stimulant as typical as it was effective.

Taylor, inspecting works shortly after the rains, found his splendid-looking, bearded Assistant sitting cross-legged on a wettish mound near one of his dismal excavations, shirt-sleeves rolled up, shirt front open, administering his unique form of stimulant to endeavour.

On a mound to his left saw a cashier with a bowl full of small coins; on his right a *metai-wallah*; ¹ and between them squatted bazaar music-makers, emitting a cheerful, unmelodious noise. Below him two gaping holes awaited the piers that must be deeply embedded to withstand the onslaught of raging water.

Out of one hole came a half-drenched coolie, crowned with his basket full of mud. Having emptied it, he held out his hand, grinning broadly, first for a small coin, then for the coveted sweetmeat. After that, he would go down for the next load, fortified, expectant—a willing slave to the Sahib who so well understood the simple needs of man.

¹ Sweetmeat seller.

In the matter of stimulating workers by music Browne was more than half a century ahead of his time ; only of late the stirring effect of it has been recognised and proved in war factories to-day. His humour and unique forms of stimulation carried along with him a willing army of workers, who completed the bridge in record time, taking pride in their achievement and declaring that they had never known such a Sahib.

Browne and scores of his kind—in the Public Works and other services—may be said to have more or less created modern India ; a fact frequently overlooked even by the British themselves, of whom it has been said by a shrewd Moslem that if ever their power fails they will have ‘ died of their own altruism.’

As to the inevitable flood—nightmare of every bridge-builder—Kipling has portrayed one such catastrophe in a superb short story of blended fantasy and fact. But an actual experience, worth quoting, is told by Browne : a flood that threatened to destroy not only his bridge, but a valuable new pile engine—the only one of its kind in India.

Let him speak for himself.

‘ Early on Sunday morning a native rushed in, saying the river was coming down about five feet deep. Out I ran and secured the engine with chains, ropes, bolts as best I could—no time to dismantle it before the flood was on us.

‘ The engine gently rose. “ Crick, crick ” went ropes and chains, to my great dismay. But after swaying about a little it found its bearings—and the worst seemed to be over.

‘ In the evening I went up to the roof of my house to bed ; and about 12 o’clock I heard much shouting from the men on guard higher up the river. Tumbling out in my night-shirt, I rushed to give the pile engine ropes an extra pull. But in three or four minutes I saw the river coming down in a huge wave, about 200 feet wide : one wall of roaring water, coming on at the rate of fifteen miles an hour, tearing down the river banks, foaming and fretting in the moonlight : a very grand sight, but not at all to my liking.

‘ By this time I had about two hundred coolies assembled,

with guy ropes ; and scuttling on shore, I anxiously awaited the effect of the first shock.

'Down it came like a wild beast tumbling high over the pile engine, which bent and swayed and rocked, while tightened chains became like bars of iron.

'Suddenly a great haystack appeared, bearing down with tremendous velocity on to my unfortunate charge. One snap, one shock, the report of a rifle ; and one after another the chains broke, sending the coolies in all directions, with cut faces and bruised bodies.

'Then off went the huge machine, bobbing and ducking as if chaffing us for our trouble ; the guy ropes torn from the coolies' hands in a moment. Four of my Sikh guard and myself plunged in after it holding on like grim death, a pandemonium of coolies rushing along the bank.

'The pile engine flung first to one side, then to the other, swung round corners with tremendous velocity ; whirled in an eddy ; then off again with a jerk.

'During these manœuvres the Sikhs and myself twisted four of the chains together. These we fastened to the great ram—a huge mass of iron prevented from slipping into the water by two large beams. A carpenter swam out to us with a hatchet, and turn by turn we went at those beams, hitting as never men hit before, till the huge bit of iron slipped into the water. Slower and slower we went along, till at last we were moored by the ram, which held us firm as a rock.

'In that short time we had gone down about four miles—and farther on was a fall in the river about fifteen feet high.

'Five minutes more and we would have been over it. We ourselves could easily have swum ashore, but not a vestige of the pile engine would have remained intact. As it is, we have saved everything, thank God. The worst of it was I had to walk five miles without shoes. Not a shoe had we in the company. It would have rather startled you to see me walking into my house that day, clad only in my night-shirt, covered with mud and water from head to foot.'

After two years on the Grand Trunk Road, Browne was posted as Executive Engineer to the Kohat Division, that

now included Peshawar and Hezara, a stretch of country more than the whole length of England—and he a subaltern barely twenty-four, handicapped by the loss of one eye from using his theodolite in too strong a glare. But no loss, no big demand could abate his herculean energy, his power to concentrate on the work in hand. Already he had revealed those personal qualities to which he owed much of his later commanding influence. Whoever had dealings with him, British or Indian, recognised him as a natural ruler of men, one who never hesitated to make drastic decisions on his own responsibility, in any emergency, at any risk—the hall-mark of great character.

He was, in fact, too individual and unconventional to be popular with the official-minded. A born pioneer, he seemed fitted by nature to wrestle with Frontier roads and railways and deal with the fierce tribes of the North-West. His great strength and physical courage alone commanded their respect. 'Brave without recklessness, alive to danger, yet facing it undismayed, he inspired complete confidence in all who worked under him. The wildest and most cut-throat creatures would follow him like dogs for years in the hope of employment. One of them protected his eldest son who was in danger; and his own implicit trust in them was never betrayed.'¹

Most genial of men, he was rigid on matters of principle. A sudden flash in his eye would reveal the strong character behind; yet never a hint of racial superiority. He would sleep in Pathan huts, accept their hospitality, join in their amusements with a friendly intimacy that seemed to draw out all the better side of their natures. For practical proof of trust and good feeling, they would even send their women-folk, on occasion, to guide him from village to village.

Those few years of close contact with every Border tribe, under extremely dangerous conditions, laid the foundation for the most distinguished phase of his later life in Baluchistan. The various nature of his actual work was unique in range and quantity. It included the construction of Civil Lines, and Cantonments in Kohat, Bannu and Dehra Ishmael;

¹ *Life of General Sir James Browne*, by M'Leod Innes.

the building of churches at Nowshera and Attock ; barracks for a regiment at Peshawar ; forts all along the Border and well-sinking everywhere. As if that did not suffice, in the intervals he was mastering local dialects and studying Oriental classics, Persian and Urdu : a programme that left him little leisure for the busy-idleness of social Anglo-India.

Those few strenuous years he reckoned among the happiest in his life : years of vigorous work and play, of increasing popularity with his comrades and his many tribal friends. Everywhere he was a welcome guest ; and whenever a good chance brought him into touch with his best friend, Henry Blair, R.E., high jinks would be the order of the day. The two together were irrepressible ; and Browne would fling himself as heartily into their spirited nonsense as into the serious urgencies of life.

But through all his many-sided executive work ran his zest for engineering. Bridges became a speciality after a visit to America seven years later, when he devoted most of his first long leave to amassing professional knowledge on that subject.

In the early 'sixties his work with Taylor on the Road was drawing to an end. A spell of soldiering intervened, when both took part in the brief Ambeyla Campaign against certain fanatical Border Moslems : Taylor as Chief Engineer, Browne as one of his subalterns. That first taste of active service, in a wild hill country, Browne enjoyed the more because, by good fortune, his fellow sub. happened to be Henry Blair.

Within a month the successful campaign was over, and Taylor back with his wife at Murree, where a son was born and christened Neville after his friend and C.O. of Delhi days.

Seven years were to elapse before he was again in touch with his first love, the Grand Trunk Road, as Chief Engineer of the Punjab, under his old friend Lord Napier of Magdala, now Commander-in-Chief. To him Taylor owed nearly every special appointment in his career ; and from that time onwards he can no longer be reckoned as unsung. It is his wonderful early work and the outstanding part he

played in the capture of Delhi that are too little known even among his own people.

His friend 'Buster' Browne, during those years, had also earned long leave in England. Returning to India with a wife and child, he was first posted to R.E. headquarters at Roorki, then transferred to the Kāngra Valley, a Himalayan region of such wild grandeur and beauty that it has been said to rival Kashmir.

Here he was back at his road-making, on very different lines: a Punjab scheme to open up the lower Himalayas for commercial tea-planting. In all the hundred and twenty miles of that projected road there was no level ground nor any long stretch of it that could be levelled: no skilled labour; only hill nomads, abysmally ignorant, whom Browne must patiently teach and train and convert, by his friendly personality, into staunch devotees. It was the same everywhere throughout his life. Whatever his human material, its response was unfailing to his understanding heart and kindly vein of humour.

But the making of that road was 'no picnic' for himself, his staff, or his army of willing labourers. It involved the continuous blasting of cliffs; the building of endless bridges, over torrents or ravines from any material at hand; many of them so remarkable, in boldness of design and conquest of local difficulties, that they drew praise from the Punjab Governor, and from Taylor himself, as 'monuments of constructive skill.' They crowned his work in the Northern Punjab and his reputation as a brilliant practical Engineer; being only excelled by his own later achievements after that fruitful year in America.

The advent of Lord Lytton—a Viceroy of the forward policy school—proved to be a turning-point in Browne's career. Lytton, an opinionated genius, with an eye for exceptional men, was not slow to discern the fine mingling of talent and character that distinguished 'Buster' Browne even among notable young men of the day. At five-and-thirty his mind and judgment were far ahead of his years, especially in the wider range of public affairs. Brimful of originality, he was at his best when free to work things out

in his own, often individual, way. Still too junior for his exceptional breadth and independence of thought to carry weight, he was too clear-headed not to hold decisive views on life and men and Frontier problems in which he had specialised from very early days.

Lord Lytton wisely chose him for important survey work between Sukkur and Sibi, with a view to laying down railways and roads through that unmapped country, where every man's hand seemed to be against his neighbour, friend or foe. But, as usual, Browne's invincible *bonhomie* carried him through. The people took a liking to him. Though he heard many tales of barbarity, he was never molested in any way. The new appointment shifted his centre of interest from the Pathan North-West to the Baluch Border that was to make his name and fame. The actual survey took him to the foot of the Bolan Pass, and brought him into close touch with the Baluch tribes—hearty, friendly folk, far easier to deal with than the fiercely independent Pathan. Keenly alive to all implicit possibilities, he entered with zest upon one of the most isolated yet most interesting years of his life.

Lord Lytton's excessive 'forward' trend had revived the Afghan question and the danger of Russian designs in that quarter. So Browne's survey report blossomed into a political paper sufficiently remarkable to excite Lord Lytton's attention. It resulted in a summons to Simla—paradise of officialdom—where Browne had always felt out of his element. But on this occasion he found himself greeted by his old friend Blair, graciously welcomed by the Viceroy, informed that his work had been discussed and approved. Lord Lytton, it seemed, was impressed by his comprehensive grasp of Border politics. He was invited to spend part of his time at Government House for daily discussions that had little or no connection with railways. And none was more surprised than Browne himself when he found his engineering work assigned to another officer, so that he might be attached to Lord Lytton's personal staff.

Temporarily he was posted back to the Pishin Border as Political Officer on special service, with instructions to keep

a close watch on the local tribes—especially a certain Pathan clan known as Kákurs—and send his reports on them direct to the Viceroy. Russian movements and intrigues with the Amir already foreshadowed the possibility of Afghan war ; hence the importance of friendliness with all Border tribes. Browne was to collect information by exploring, surveying, even by disguise if need be. In Lytton's own words he was 'to keep open the door of the Kákur country and use the best means he could devise for gaining insight into secret local politics': an appointment in the true Lawrence tradition. He was simply told what must be done—and left to do it by the light of his own intelligence. While keeping a close watch on the tribe, he must so completely win their liking and confidence that, in the event of war, they could be relied on to stand by the British Government and refrain from siding with the enemy.

For such a project Browne was eminently fitted by knowledge, brains and temperament ; nor could any mission have been more welcome to him after months devoted to intensive study of the region, the language and the people.

For another whole year he lived alone in those fierce hills, cheerfully facing risk, exposure, privation ; his disregard of danger being all the finer because it was taken for granted and known to so few.

His only concern was for the important work which he carried through, in his own fashion, with complete success.

A year later Lord Lytton's manœuvres led inevitably to a second Afghan War—of which more will soon be told. Then did the full value of Browne's achievement stand revealed. For the Kákurs—once deadly enemies—fired never a shot against British troops. They even informed the Amir that, owing to generous British treatment, not a Kákur would join his forces.

These are the unobtrusive victories of character, little heard of outside their sphere ; victories as effective and often more lasting than any success on the field of battle.

For Browne himself that time of crucial work behind the scenes was but the first step towards the crowning years of his life, when he was to succeed the famous Sir Robert

Sandeman in full command of Baluchistan. It brought him into close personal touch with Sandeman, who was then engaged in settling that region of leaderless, warring tribes through the potent influence of persuasion and friendly understanding. Each of them, in his own fashion, stood for the ideal type of Frontier officer, living always at high tension, equally ready to seize any risk or opportunity; armed for nerve-shattering contentions with Authority, if needs must; both of them men who, in emergency, would instinctively do the wise and not the foolish thing. And Sandeman was given time—the essential element, denied to most civilians, who spend half their service being shifted from pillar to post. For sixteen years he was left unmolested to carry out the policy of civilising influence, his only interruptions being caused by persistent ill-health, mainly from overwork.

Neither man then dreamed that Browne would follow after in the same tradition. Men of like quality, they worked together in perfect accord, both fully aware that, between a restless intriguing Russia, a dubious Amir and an aggressive Viceroy, there was little chance of a peaceful issue.

When the harassed Afghan Amir finally refused to receive Lytton's mission to Kabul, the fat was in the fire; and the Viceroy—further impressed by Browne's political genius—attached him as Intelligence Officer to General Biddulph's force.

His distinguished services throughout both phases of the war, and his queer personal influence over the Ghilzai tribe—attributed to a supposed Afghan 'double'—must be read in the record of his *Life and Times*, by General M'Leod Innes. We are here concerned mainly with Browne the engineer and his supreme achievement, the Sind-Pishin railway; surveyed in 1876, but not taken on again by him till his return from two years' furlough in 1883.

By that time his admired chief and lifelong friend, Sir Alex. Taylor, had been reluctantly obliged to leave India at the height of his career: a personal sacrifice of brilliant prospects to a private emergency, self-imposed and faced

with his innate nobility and courage. Six years earlier the same dilemma had almost come upon him through the threat of blindness—a common calamity among Engineers owing to the fierce Indian glare and constant use, in full sunlight, of finely adjusted optical instruments.

Only after months of depression, semi-darkness, and dread had he been restored to light and work by a continental specialist. Unluckily in those days of semi-darkness he had been obliged to refuse the high appointment of Quarter-master-General offered him by the Commander-in-Chief, Lord Napier, who saw how his devotion to the Road was debarring him from higher military posts that were his due. But his return to India—sight and health restored—was signalled by two high appointments very much after his heart. As Government Secretary to the Public Works Department he earned the 'red ribbon' of his original service and an all-round acclamation from his fellow Engineers. In addition, he was offered a newly made post—President of the India Defence Committee, with permanent offices in Simla: no hot weathers and the very climate for his delicate wife; while tours of defence inspection would take him all over India and involve the kind of arduous work he loved. Most of all he rejoiced in the new power and opportunity to use his lifelong experience in a peaceful form of active service for the land of his adoption. To crown his content the English mail brought good news of his wife, whose health had given way after months of devoted help during his semi-blindness. Now, at last the doctors had given her leave to join her husband in India, the best that could befall.

Happy in the present, hopeful for the future, he was very much occupied throughout December with his tours of inspection that kept him longer than usual away from Headquarters; and returning on the 30th to Calcutta, he found three weeks of Home letters awaiting him. Eager for news, he opened them—only to receive shock on shock; each letter heavier with tales of domestic trouble that seemed to call for his immediate return. Instead of welcoming his wife to India he saw himself, as husband and father,

urgently needed at home : a harsh reversal of high hopes and plans.

One whole day he spent alone in his room thinking the matter out ; and early next morning telegraphed his resignation of the two posts that had been so welcome to him, so valuable for India. With a stroke of the pen he had stripped himself of everything.

It is difficult to imagine what quixotry of thought impelled him to that decision ; and there was none at hand to save him from himself. A month must be spent in Simla, to complete schemes of Imperial Defence initiated by him ; and in February he must bid good-bye to India—to high projects and golden prospects—for ever. At fifty, in the fullness of vigour and ability, his Indian career came to an end—nominally by his own choice. Actually his clear-eyed sense of duty could see no choice in the matter.

‘Nothing dulls the ache of pain better than change of scene,’ he wrote to a friend ; and in less than two years complete change of scene and of work revived his active interest in life.

Towards the end of 1880 he was urgently pressed to accept the post of President to the Royal Indian Engineering College at Cooper’s Hill, an Institute created by Colonel George Chesney, R.E. Occupying a palatial country house set on the crest of a wooded hill above the Thames between Windsor and Runnymede, it was possibly the first in a long line of great English homes transformed into centres of education.

The offer did not originally attract Taylor, who declared he was ‘no schoolmaster’ ; a man of action rather than of books. But Chesney would take no refusal ; and the other soon perceived that here was a heaven-sent opportunity to carry on work for India by preparing a younger generation to go out and serve her in the right spirit. Through his influence he could stimulate ‘a real liking for India and its people—shrewd observers of character, who attach more importance to breeding and disinterestedness than to learning.’ He could bear witness to the indisputable truth that character,

first and last, has been the true foundation-stone of British power in the East.

In his own case, for all his brilliant brain, it was his nobility of character that most deeply impressed all who knew him. Therein lay the secret of his 'great and inspiring influence for good' throughout his sixteen years at Cooper's Hill. His outlook in the training of students was that of the statesman, rather than the Engineer. His mind reached beyond the handling of bricks, mortar and steel, to the handling of men; the need to supply India not only with trained Engineers, but with English gentlemen.

'Here we have grit,' he said himself on one occasion. 'The quality that goes to make a service distinguished: a personal quality beyond the reach of lectures, laboratories and examinations.' The spirit, not the letter, was his lifelong concern. In every form of work he recognised 'a purely spiritual element, which is in reality a condition of human achievement, a sane idealism that will never let great ends be sacrificed to the utility of the moment.'

Technical training he could leave to an admirable staff. On him alone rested full responsibility for the characters of his young men, who must be imbued with his own profound religious faith, his own high standard of public life and work. How finely he fulfilled his human task has been proved by the fact that the spirit of his *régime*, maintained by Cooper's Hill in its thirty years of life, definitely raised the standard of all other Engineering schools. It sent out to India the right type of men; and more than ever the right type is needed out there to-day.

Taylor himself—banished too early from the country and the work he loved—never lost interest in all that was being done for India by younger friends whom he had left behind. Especially he watched with admiration and affection the career of his former talented subaltern, 'Buster' Browne—now Colonel James Browne, R.E., engaged upon his great engineering feat, the Harnai Railway connecting Sind with Quetta, capital of Baluchistan. Taylor knew how tremendous were the defiles that must be traversed in the process of building that formidable line; but the tougher the task the

stronger the appeal to Browne, whose energy and resource had not diminished with years ; the more keenly, too, did it interest Sir Alex. Taylor, since his own son-in-law was one of Browne's most trusted Adjutants.

And so back to India swings the shuttle interweaving the life and work of these two exceptional men, half-forgotten by this time, if indeed the full scope and value of their services were ever realised by their countrymen outside India.

It was in 1883 that Colonel Browne returned from active service with Kitchener in Egypt to find himself detailed for immediate construction of that same Frontier Railway, an off-shoot of the main Lahore-Peshawar line. Through change of party Government in England, Gladstone was again in power ; and a Liberal Cabinet at once reversed the extremely forward policy of Lord Lytton, who had aimed at annexing all Southern Afghanistan. Inevitably the backward swing involved the kind of wholesale withdrawal so bewildering to the Asiatic, who lacks the political clue to such apparent vacillations. Lord Lytton, obliged to resign, was replaced by a Viceroy pledged to Gladstone's policy of 'peace and retrenchment.' Kandahar must be abandoned ; all 'forward' railway work ruinously undone. Rails and plant that would have been invaluable to Browne were torn up and sold for a song, only to be bought again later at a fabulous price when future events created a recurrent scare in that region.

Fortunately the backward move had stopped short at Quetta, that must now be made speedily accessible to troops and all munitions of war. But, between Sibi and Quetta, ranged high, de-forested mountains ; wedges of naked rock carved into gorges and fantastic pinnacles by rain and frost and the action of rivers in flood : a positively inimical country where Nature poured out 'all the climatic curses at her command !' In violent extremes of heat and cold it rivalled the Khyber Pass ; its lowlands from May to July being accounted 'the hottest corner of the earth.' As to supplies, there was no local food available : hardly a blade of grass to be seen ; no water often for miles ; no lumber or

fuel, and its inhabitants were mainly cut-throats and thieves. The whole undertaking, on the face of it, must have looked impossible even to an engineer of genius; but the white man in the East spends much of his service in achieving the impossible, without any particular credit expected or received. In this case, as an urgent military undertaking, it positively must be achieved—and in record time.

All was settled in Simla, to Browne's complete satisfaction, by direct arrangement with the Commander-in-Chief, Sir Donald Stewart, his old friend and leader in the Afghan War. His funds were not to be limited. There were to be no cramping demands for estimates or sanctioned designs. Speed was to be the one consideration. He was, in fact, to have the free hand essential to his tremendous task.

In October he left Simla, completely unaware that some sudden exigency of State affairs had upset his whole understanding with Sir Donald. A fresh Member added to the Viceroy's Council had been placed in control of Public Works, and the Harnai railway—a military affair—had been inexplicably transferred to civil control. Only on reaching Sibi did Browne discover, to his dismay, that he had been placed under an unknown Member of Council: all his arrangements cancelled—his special latitude, his freedom from detailed control: his whole position fundamentally changed without lessening his responsibility for results.

So unexpected a *volte-face* upset even Browne's equanimity; but he seldom wasted energy in kicking against the pricks. He could only push on with his urgent work in the hope that at least he would be free from personal interference. Vain hope. That far-off Member of Council began haggling over details from the start: demanding estimates as to the cost of driving a railway through unknown country in the teeth of obstacles equally unknown. And while he haggled, the Russians were nearing Merv. They had coerced Persia and Afghanistan. So that the fear of a sudden advance in force emphasised Browne's need for unhampered progress.

On the other hand, there was the Secretary for Government demanding, 'When will the line be complete?'

Browne's reply was conclusive: 'With money freely

granted—in two and a half years'; an undertaking he fulfilled to the letter.

In the terrific country ahead of him, engineering problems were legion. For practical purposes the line was worked out in four divisions beginning with the Nari Gorge, channel of a tortuous river that had carved its way through beetling cliffs and fantastic peaks many thousand feet high: one of the most weird tracts of earth through which a railway has ever been carried. The gorge itself must be crossed five times, involving six bridges in as many miles, over a harmless-looking river subject to violent floods at irregular seasons.

More formidable still was the great Chappar Rift, higher up the line: a chasm two and a half miles long, often only a few yards wide; no more than a camel track beside a stream that also became a roaring torrent in flood-time, between cliffs three hundred feet high. Finally the line must climb to its highest point, 6800 feet; twenty-five miles across a mountain mass little better than hard mud, where cuttings and tunnels must be run through treacherous soil of quite a different character. After that, through more rugged mountains came the descent to Quetta: the whole distance a matter of 224 miles.

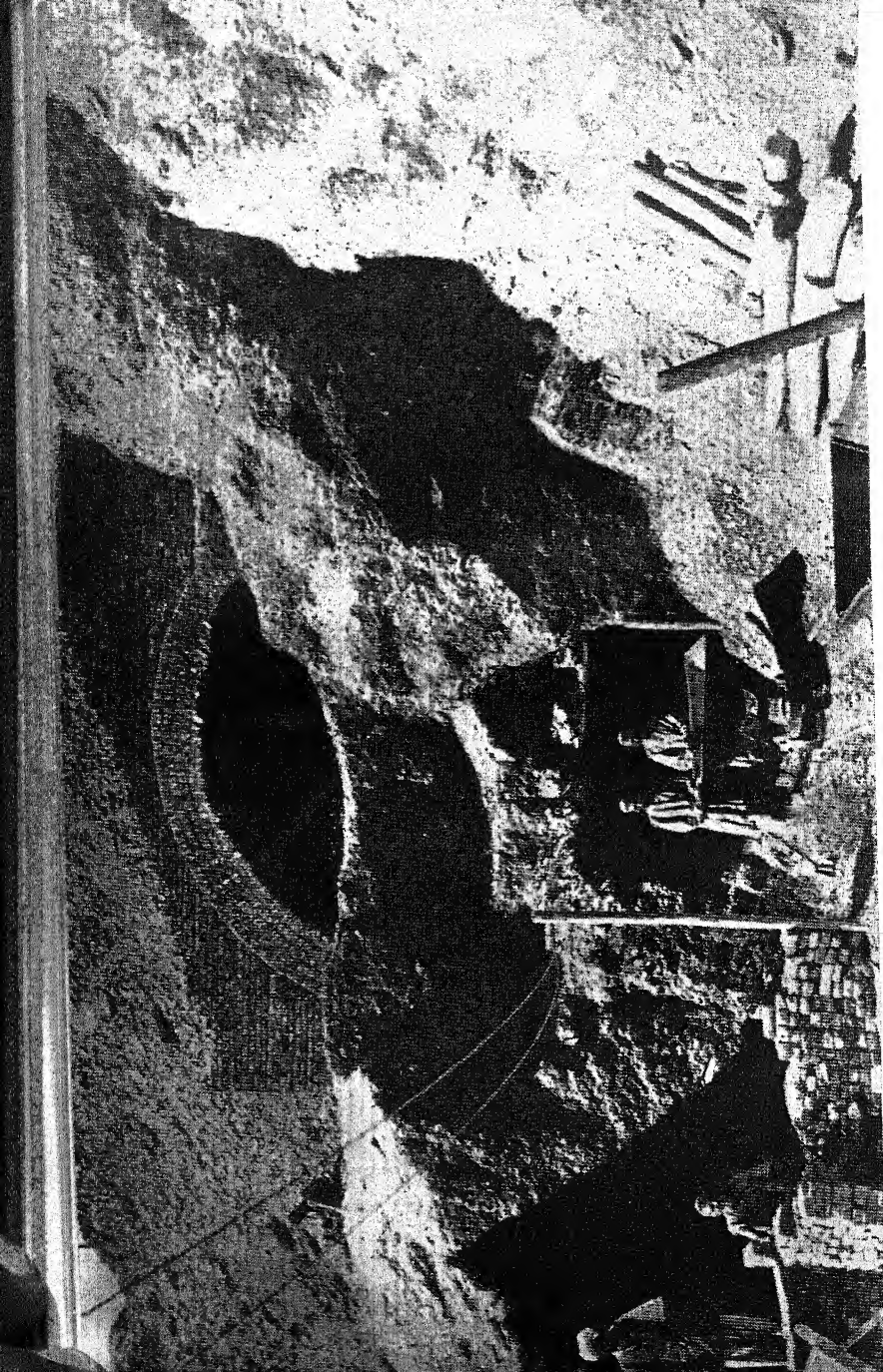
And to every form of obstruction was added the disabling curse of sickness: even the more temperate zones were infected with a local form of malaria that surpassed in virulence anything within ordinary Indian experience.

Worse than all were the dread visitations of cholera. The first wave of it in November 1884 brought work almost to a standstill. Three Pioneer battalions were decimated by it. Desertions multiplied. The Afghan workers absconded to a man; and the whole native clerical staff followed suit, enlivening their dire decision with a characteristic telegram to Browne: 'Clerks in Council. Cholera raging to-night. All go. What can man give in exchange for soul?' How their places were to be filled did not concern the composers of that eloquent plea for safety first.

And that was not the end of cholera visitations by any means. It reappeared and wrought even severer damage in



The Heart of the Chappar Rift.



Tribesmen at work on a Khyber Railway Tunnel near Landi Kotal. (See p. 135.)

May and June. It carried off several valuable officers and one thousand employees out of twenty thousand before the plague was stayed.

In May—when things were at their worst—moves in Central Asia created the periodical scare that brought a telegram from Simla, urging that the work be persistently carried on, 'even at the sacrifice of lives.'

So the work went on ; and the deaths went on—not from cholera only, but from scurvy and fever and general collapse. Yet every man who worked under Browne caught fire from his ardour, courage and resolve. Among them all was none more notable than Captain Buchanan Scott, one of his most talented and tireless Assistants. In spite of constant fever and a severe attack of cholera, his sheer will to work carried all before it.

His division of the line, during the hot season, covered twenty-eight miles of the Chappar Rift : great spurs of a rocky mountain crossing the drainage of the country ; a freak of Nature calculated to defy even the cleverest Engineer. Impossible to traverse that rock except by two lines of continuous cement-lined tunnels, ending at opposite points level with each other ; the chasm between to be spanned by an iron girder bridge 225 feet above the river-bed.

Labour apart, what such feats of daring amounted to, in sheer strain of mind and muscle and nerve, cannot easily be conceived. The necessary tunnels alone, owing to extreme hardness of the rock, could not be built in the usual way, running continuously on either side. They must be achieved by a number of approaches, or short tunnels, from the precipitous cliff to the interior passage ; and it was in the placing and constructing of these that the engineers and workmen were called upon for 'a degree of physical courage as great as was ever needed in any operation of life.'

To ensure openings at the right level, the men must work from horizontal shafts driven inwards from the face of the cliff. This entailed the dizzying process of letting each man down in a rope chair from the summit that he might bore a hole at the exact place with his steel 'jumper.'

In this fashion, thanks to that bold and singular device,

six openings were made on one side of the cliff, six on the other: the whole tunnel blasted out in a few months, ready for the high connecting bridge, not the least astonishing item in a programme associated chiefly with the name of Captain Buchanan Scott, R.E., inspired by the ingenuity and boundless energy of 'Buster' Browne.

Scott himself wrote afterwards: 'The design calculated for the making of this Bridge cost me many months of thought. Only materials at hand were available. The erection of that mass of iron was no small problem; but the whole was completed without the loss of a single life, though the workmen were sometimes nearly blown off the piers by the wind; the tallest pier being ninety feet high.' There are six tunnels in the eight miles and three larger bridges beside the Louise Margaret, opened by and named after the Duchess of Connaught.

The whole division of the line had been entrusted to Scott by a leader who knew how to pick his men and who never failed to give honour where honour was due. Browne's tribute to his Executive Engineer must be quoted in any attempt at portraying the hazardous, valuable work done by Britain for India.

'Scott and Whiteford,' Browne wrote to Simla, 'have had divisions in the upper and lower sections of the line, tunnel and bridge building, girder erections and plate-laying, with a temperature in the *house* of 120; and the same work with temperature in the *verandah* of 18 below zero, deep snow and rivers blocked with ice. Scott, who had been on the line from the very first, has surveyed and constructed the whole twenty-eight miles of the Chappar Division. He has now made over 2000 feet of cement-lined tunnels, mostly in very dangerous and treacherous soil, where no native would venture without European example, owing to the unavoidable danger involved. . . . The handling and planning of such enormous weights—involving many lives, if there were any lack of courage, skill or precision—represents a strain of personal responsibility and anxiety which it is not easy to overstate.'

Only an active imagination can begin to realise a tithe of

the struggle, the ultimate triumph implied in that undecorated statement of fact.

Of his own contribution, first and last, Browne could not write; but there were others to testify that 'his was the master mind: his the final responsibility for success or failure. He was everywhere; controlling, advising, cheering the workers, comforting the sick. Often men were heard to say, "I would do this for 'Buster' Browne, but for no one else." It was Browne's personality that carried the work through. It was this that inspired his men.'

Everywhere and always great achievement springs from great personality coupled with enthusiasm—the magnet and the lever. One might almost say that without those twain 'was not anything made that is made.'

But no human power could cry 'Halt' to the devils of destruction and delay. And these did their damndest early in the second year of that mighty race against time. Long before the normal flood season, rivers were churned into torrents by a vast volume of water some forty feet deep, rushing down from the higher hills with unheard-of force and fury. By a malign perversity, that abnormal, continuous rainfall, for three months on end, exceeded anything of the kind that had been known for fifty years. Again and again the winding Nari stream rose with incredible swiftness into a torrent that demolished embankment, material, works—all repaired at great expense, only to be again destroyed by a fresh, unexpected onslaught before preparation could be made to resist the enemy.

The last and most disastrous of these floods raged for six days, carrying away miles of road, deluging whole camps, stopping the food supply, and causing a fatal epidemic of malaria.

The tale of devastation culminated in an episode eminently characteristic of 'Buster' Browne and his way with the men under him.

The flood, in its fury, had dislodged a large and expensive pumping machine lately arrived from England and hurled it into an excavation, where the precious machine floundered in deep water. At all costs it must be saved; and Browne,

unmindful of his dignity as General in command, hurried to the rescue ; heartened the distracted workmen and fired their zeal to retrieve his treasure with the human incentives that had so often done wonders in his subaltern days.

A native band filled the air with inspiring music and the weirdly compelling mutter of tom-toms : a form of encouragement that took instantaneous effect.

Very soon, hundreds of men thronged the narrow valley, and boldly plunged into the waters of destruction. Between the magical effects of the music and Browne's personal encouragement, they were spurred to so mighty a collective effort, that within a few days the pumping machine was lifted out of danger on the wave of goodwill and energy evoked by the Chief Engineer.

Next time the Nari rose in wrath it was powerless for evil ; and the great exploit, in defiance of disease, destruction and inimical country, moved on to its appointed end. Within thirty-two months—as promised—the whole 224 miles of railway—presenting almost every conceivable problem of construction—was completed under Browne's inspiring leadership, by his army of coolies and his handful of British engineers.

The first engine rumbled over Scott's Bridge in February 1887 ; the first actual train on the 10th March ; and one week later an engine ran right through from Sibi to Quetta. Once more, in Britain's island story, the impossible had been achieved as a matter of course, ' all in the day's march.'

The story of that great exploit—forgotten, if ever fully known—ended with an impressive opening ceremony, graced by Sir Frederick Roberts and the Duke and Duchess of Connaught, when the Duchess herself personally opened the Louise Margaret Bridge. By her wish, and on her behalf, Browne specially addressed all the native workmen who had played their humble yet important part in a grand achievement—one of the greatest in India.

The whole line stands for the culminating triumph of Browne's remarkable work as an Engineer. It was followed by long leave in England, by appointments to higher, more responsible positions on his return to India ; but few

phases of his manifold experience can have given him deeper satisfaction than the strenuous and often anxious thirty-two months that gave Baluchistan its Harnai Railway.

After that he had but ten more years to live; first as Quartermaster-General, then as Governor of Baluchistan, carrying on Sir Robert Sandeman's successful policy of peace and goodwill, in spite of many hindrances and the failure of his persistent efforts to free the whole Border from Punjab control, to place it directly under the Simla Foreign Office—a subject to which he had given the closest attention for years.

At the early age of fifty-six 'Buster' Browne died in harness, his iron constitution worn out by relentless, lifelong over-exertion. The end came swiftly after a few days' illness; and the funeral—as always in India—followed hard upon. The whole population of Quetta thronged the road in mingled sorrow and respect for the man who was personally beloved by many of them, honoured by all.

For James Browne, in addition to his many fine qualities of mind and character, possessed the indefinable genius to be loved in almost the same measure as Sir Henry Lawrence himself. His success with Indians sprang largely from a subtle touch of consideration—a hall-mark of the true Sahib that they are quick to recognise. For all his gaiety of spirit, his real friends were chiefly attracted by his depth and constancy of heart; and few among them felt the sudden, unexpected loss more deeply than Sir Alex. Taylor, who lived for another sixteen years.

During most of that time he continued to serve India. For he left his individual mark on Cooper's Hill and on the many young men who were privileged to spend a formative time under the dominating influence of his character. They themselves have testified to the enormous 'importance and value of the work done by Sir Alex. in the last phase of his active life; a phase in which he was privileged to uphold the Cooper's Hill standard of personal character, integrity and honour.'

The words written by his own staff on his retirement in

1895 may fittingly conclude this inadequate study of Alex. Taylor and 'Buster' Browne, two devoted workers for India; typical, each in his different way, of the spirit that informed the finest Victorian Anglo-Indians—too often misunderstood and misprized by those who came after and reaped where they had sown.

'The pages of English History remind us that, but for the heroic and devoted services of Englishmen in India nearly forty years ago, there might now be no Indian interests for them to cherish; and prominent in that record stands the name of Sir Alex. Taylor.'

A HUNDRED YEARS OF THE KHYBER PASS—1842-1942

1

THE KHYBER: AS IT WAS

1

'I dreamed I was an husbandman whom God sent into a dreary world; . . . and the more I worked the tougher looked my plot. I was tired; and when I saw that God watched me, I said, "The toil is hard, but I shall see the fruit." And God turned away saying, "You shall not see the fruit." "But there will be fruit, oh Lord?" And God said, "For all your labour you get strength, not fruit." Then I, complaining, "If cold be so much better to train wild flowers . . . but here are always thorns for me to eat." And God said, "If there were not thorns, I had here no need of such an husbandman as you."'—E. S. BOLTON.

THE Khyber: magical words for all who know anything of India, even by hearsay. Always there is fascination in the long backward look; and the Khyber can look back on the passing and re-passing of trade caravans, the march and counter-march of conquering hosts through centuries that merge into the mists of time.

For more than two thousand years Persians, Greeks, Tartars, Mogul and Afghan have debouched on to the plains of India through its impressive defiles—twenty-seven miles of rock and boulder and craggy hills that seem to emanate an uncanny atmosphere of secret hostility to man and all his works.

And outside on the plain, only ten miles from Peshawar, the familiar, squat fort of Jamrud has crouched, watchful for any hostile sign of life from those deceptively empty-looking hills—crumpled ridges and fantastic peaks, restless yet immobile; a No Man's Land that is neither India nor Afghanistan; one of the least known and most remarkable regions of earth.

From the stony plain those hills rise abruptly, forming a V-shaped entrance. Beyond it they fall apart, only to crowd

close in again like an embodied menace ; their yellowish-brown surface changing, as the light shifts, to subtle shades of green and blue. The keen dry air, astonishingly clear, intensifies the effect of unreality that pervades that strange land : no haze, no perspective, no charm of gradual transition. Sudden light gives place to sudden darkness ; icy blasts of winter to a spring so brief that it seems only a prelude to furnace blasts of the fierce northern hot weather.

And, as is the country, so is its race of arrogantly independent men, in whom courage and cruelty, cunning and candour, humour and ferocity are as sharply contrasted as their stark hills and stream-fed valleys. Brave, intelligent, self-reliant, they are in many ways akin to the old Highland clans. They have never been ruled by a king, nor rendered allegiance to any but their own chiefs and *Mullahs*—holy men who too often use their power to unholy ends.

The Pass itself was originally the watercourse of a stream that carved its way between two rocky ranges, geographically the most important of the few northern routes between Asia and India. Never snowed up in winter, though icily cold, it provides liberal springs of water every ten miles or so ; a surprising feature in an almost rainless region. Through the magnificent gorge of Ali Masjid—roughly half-way—a perennial stream flows between almost vertical cliffs : a stream that is now pumped back uphill to form the water supply of many tribal villages and of the garrison at Landi Kōtal, the one plateau that commands a far view over desolate hills towards Afghanistan.

Grander and wilder is the outlook a mile beyond the Kōtal, the road cutting its way through a narrow crack, sinister and full of echoes. A sudden turn reveals one of the most impressive views in the world—magnificent, yet menacing in its savage grandeur. From a sharp drop in the foreground one looks out, as if from an airplane, over two hundred miles or so of naked, unmapped country, threaded by the winding Kabul River. Beyond, and again beyond, ridges and scarped summits form a titanic amphitheatre, crowned by snow mountains of the Hindu Kush, a hundred and twenty miles away, yet so sharply clear that on a cloud-

less day of winter their majestic proportions 'seem to hit one in the face.' Westward, they are flanked by dagger peaks of the Tirah stabbing the hard blue sky.

From that stupendous climax the road winds down another six miles to Landi Khāna—the end of India: the edge of Afghanistan.

The tribesmen of the famous Pass are mainly of the Afridi clans; the strongest and most formidable of their kind. Natural fighters and unerring marksmen, they have found it simpler and more congenial to live by raiding Indian villages than by trying to cultivate their own unfertile soil; and while the Sikhs were masters of the Punjab, Pathan zest for looting was stimulated by long-standing religious antagonism.

Then came the British—conquering and finally annexing Ranjit's kingdom; and the whole difficult problem of their relations with Afghanistan hinged on the vagaries of those turbulent tribes: a problem further complicated by political changes arising from two opposite schools of thought. The 'forward policy,' favoured mainly by Conservatives, aimed at pushing the British Frontier right across the tribal area, taking in its stride the formidable task of controlling and civilising a fiercely independent race of men, who had been left almost unmolested for three hundred years.

Votaries of the 'backward policy'—mainly Liberal—advocated leaving that independent zone to form a defensive barrier against any invaders and attempting no permanent occupation beyond India's racial and geographical boundary line—the Indus. Soldiers have always tended to favour the first; Politicals and diplomats the second. Vacillations to and fro have resulted in a form of compromise native to British genius. Refraining from overmuch interference with the tribes, unless their behaviour enforced it, they have also refrained from permanent occupation, except in turbulent Waziristan; while a peaceful and modified forward policy has been carried on by Political Agents; visiting tribal areas, instituting flag marches and building roads to encourage that chief of civilising influences, the motor-bus.

It was the forward policy school, in aggressive mood,

that virtually thrust upon an inexperienced Viceroy the ill-planned, ill-fated First Afghan War. In 1839 the fear of Russian invasion, not altogether unfounded, was magnified by a group of Simla Secretaries eager to play their own part in 'the great game' of extending England's political influence into Central Asia. Afghanistan at that time was united, as never before, under its strongest and ablest Amir, Dōst Mahomed Khan. In fair fight he had defeated the late Amir, Shah Shuja, forcing him to seek refuge in India, where he still lived in retirement, drawing a superfluous pension, till Government, for its own ends, was unhappily inspired to regard him as a monarch unfairly deprived of his throne; was even prepared to replace him on that unstable eminence at the cost of making war on the so-called usurper, Dōst Mahomed Khan, who, in spite of Russian overtures, frankly favoured friendship with England. Nothing but the infatuate policy of the Indian Government changed him into an embittered enemy.

There are recurrent periods of history when the political atmosphere seems charged with microbes of evil; so that the minds of even the sanest men become infected by them. These—looking back—must often wonder what malign fatality caused them to act as they did. In this particular case, fatality or rank misjudgment was responsible for a chapter of tragedies, muddles and heroism unequalled in British annals.

The whole bewildering story I have told in detail elsewhere: its fated atmosphere of Greek tragedy, its tangle of human motives and clash of character; the sense of inescapable doom, the awful retreat and massacre of a deluded army, in those tragic autumn and winter months of 1841-42, just over a hundred years ago.

'Never'—it was afterwards written—'not even before the Mutiny, was the whole fabric of British India in graver danger than in that critical spring of 1842, when the word went from city to city that British Power was broken and the Sahibs would soon be leaving India.'¹

¹ *The Hero of the Herāt and The Judgment of the Sword* (Maud Diver).

They did not leave it then. They have not left it yet ; and it will be a bad day for both countries if such an event should ever come to pass.

It was in that same critical spring that General Sir George Pollock forced the Khyber Pass with his Army of Retribution—the first invading army that came *from* India—and wreaked vengeance on Kabul City: strange prelude to the ironical climax of reinstating that very Dōst Mahomed who had been driven from his rightful throne at an uncounted cost in money and lives.

But if the triumph of forcing the Khyber belonged to George Pollock, the less spectacular achievement of keeping it open, for supplies and communications, was carried through mainly by the energy, skill and resolution of two young Political Officers, Captain Henry Lawrence and Captain Frederick Mackeson ; the first of them destined to leave a memory that will live for ever ; the second, almost his match in brains and character, fated to be murdered some twelve years later, in Peshawar, at the early age of forty-seven. Even so, he left a name honoured and respected among Pathans 'above that of any other Englishman who has served on the Peshawar Border.' What that means can only be appreciated by readers who know Border history and the quality of those Englishmen who are honoured and remembered there to this day. Emphatically Frederick Mackeson—scarcely known of outside India—takes high rank in the noble army of 'The Unsung.'

In those early days he was Political Officer of Peshawar, sharing with Henry Lawrence the difficult task of 'keeping Pollock's back door open' ; both men consistently doing more than their duty in the many small ways that often reveal great character ; 'the spontaneous, over-and-above services that no authority will ask you to do or thank you for doing, but which the true man sees he can do—and does accordingly.'¹ For the Khyber, though nominally in British hands, was virtually held by grasping Afridis and truculent Sikhs ; Mackeson, at one end, bribing the Afridis ; Lawrence, at the other end, manipulating disgruntled Sikhs : a harder

¹ Sir Henry Lawrence.

matter for both men than any but themselves were ever likely to know.

Lawrence ultimately went forward with his Sikhs to join Pollock at Jalālābad, while Mackeson remained to carry on alone his charge of the Pass; and he kept it clear, as long as need be, without one serious interruption.

Such men never tell the tale of their doings, that are taken for granted by themselves and their fellows. But Indians (or Pathans, as may be) seldom take for granted those white men whose pre-eminence of brains and character they experience in the round of their daily lives.

After his fine unspectacular years in the Khyber, winning the trust and devotion of the tribes, Mackeson was appointed Commissioner of Peshawar by Lord Dalhousie. In that position he still had control of the Khyber; still maintained the allegiance of the tribes through personal contact and confidence. Yet, by one of life's persistent ironies, it was a Pathan who murdered him, simply because he was a white man and an 'infidel'; and to kill such an one was, for the fanatic, an act of merit, ensuring his own entry into paradise.

The tragedy happened one September evening in 1853. Mackeson, sitting outside his house, was hearing and receiving petitions, when from the mixed crowd a Pathan approached him, proffering a written paper.

While Mackeson scanned it, the seeming petitioner whipped out a dagger from under his shirt, and stabbed the Commissioner in broad daylight.

Death was not immediate; but Mackeson—'one of the greatest Englishmen who ever served on the Frontier'—lived only a few days after that cowardly assault.

Later on, by private subscription, a small monument to his memory was put up on the Mall, with a well close by to provide pure drinking water for all: the kind of memorial that he would have appreciated almost as much as the fine tribute paid to him by Lord Dalhousie.

'His value as a political servant of the State was known to none better than the Governor-General himself, who, in a difficult and eventful time, had cause to mark his great ability and the admirable prudence, discretion and temper

which added tenfold to his soldier-like qualities of character. The loss of Colonel Mackeson would have dimmed a victory. To lose him thus—is a misfortune of the heaviest ; for the Government counted him among its bravest and best.'

Dalhousie it was who first recognised the need to create a separate Frontier Province ; and he had, in fact, chosen Mackeson to be its first Governor. That important project, deferred by his death, was destined to be left in abeyance for half a century.

But those on the Border who most deeply felt the loss of their loved and honoured Commissioner were less concerned with his high political destiny than with the man who had so endeared himself alike to British and Pathans. The memory of Mackeson Sahib, like that of ' Jān Nikulseyñ,' became a tradition ; so that forty-five years after that senseless murder his name and fame and character were still as fresh on the Border as if he had passed from them no more than a few weeks before. Yet there exists no *Life of Mackeson* to immortalise his memory or to tell how it was that he made himself so loved and respected by those robber clans of the Khyber Pass, who give their allegiance to strength and courage—and do not forget.

2

It was nearly twenty years after Mackeson's death that there came to the Peshawar Border a young Gunner officer, Robert Warburton, lately appointed to the Punjab Commission ; and in his record of Border service he testifies to the abiding memory of Mackeson among men who love and hate with a fierce intensity that makes their loyalty and respect worth the winning.

Himself the son of a Gunner, he was the child of an unusually romantic and adventurous marriage.

It happened in 1840, during the brief British occupation of Afghanistan. That earlier Robert Warburton was stationed, at the time, in Kabul city with several British officers, whose fair faces were looked upon with favour by

Afghan women, seeing them through the eyeholes of their *burkhas* when they went abroad, themselves unseen. And as the men of Kabul were noted for hospitality, so were the women renowned for their love of intrigue; and as long as they wore the *burkha* in public they enjoyed an amount of personal freedom rare in the East. Beneath those shapeless folds lurked the eternal siren in gaily coloured tunic and trousers, hair plastered, ears outlined with silver rings, rouged cheeks adorned with tinsel patches of gold or silver cunningly set—the ceaseless instigator of blood-feuds, the disturber of domestic peace.

Small chance had the average young mid-Victorian officer against wives so exotic; and Warburton, after many secret meetings, fell deeply in love with a noble Afghan lady famous for her beauty and wealth, wife of a Kabul Sirdar and niece of the banished Amir Dōst Mahomed Khan. Ruefully he must have recognised the impossibility of marriage; but when a man is young and a woman beautiful, the strangest things may come to pass.

All hinged on the daring and devotion of the Sirdar's wife, who did eventually manage to flee from her husband's house, taking with her an infant son, and finding refuge with friends who encouraged her romantic adventure. How she and her English lover escaped the vengeance of the defrauded Sirdar none can tell. There must have been, on the woman's part, an unusual degree of daring and astuteness backed by the almost unbelievable good luck that is said to favour lovers who have the courage of their devotion.

By luck or skill, she did succeed in remaining hidden, till the Sirdar was forced to recognise that he must face his loss with dignity and procure a formal divorce. Afterwards, she was married to her young Gunner in the presence of Vincent Eyre and several brother officers, who added their signatures to that curious marriage certificate.

One year they had together before events worked up to the climax of an Afghan rising, the murder of Sir Alexander Burnes and other Politicals. A certain number of officers escaped with their lives, but otherwise lost their all. Young Warburton's Afghan wife, unlikely to be welcomed in British

cantonments, chose to stay behind, till the storm subsided, with her small Afghan boy, whom he had generously adopted and christened John Paul Warburton. Like the rest, she no doubt felt confident that British arms must prevail; but, on this incredibly ill-managed occasion, it was Sirdar Akbar Khan, son of Dōst Mahomed, who prevailed; murdered the infatuate Envoy and finally induced a British army, 16,000 strong, to leave those indefensible cantonments under a false promise of protection from attack by the tribes. Six hostages he demanded for the fulfilling of certain pledges extorted from the departing British; and among these went Robert Warburton, who thus escaped the horrors of that awful retreat and massacre, but could not regain possession of his lovely Afghan wife.

Safe back in India, he probably gave up all hope of seeing her again; but that brave and devoted young woman, with her three-year-old boy and a child on the way, had no idea of submitting to so dismal a fate, though her courage and resolve were strained to the utmost in her efforts to escape from the pursuing vengeance of Akbar Khan. From house to house, from place to place she fled; and always his troopers pursued her; but always, by some marvel, she avoided them, and found friends who helped her to journey along the hideous route towards Peshawar, strewn with the corpses or whitened bones of a massacred army.

It was in a Ghilzai fort, between two of those grim passes, that Robert Warburton's son was born and christened after his father; but not until they had been almost a year apart did the adventurous pair, with their two small boys, at last come together again.

Both brothers, when they grew up, earned distinction in their different services. John Paul, in the Police, proved himself a terror to evil-doers and a detective of genius. Robert, as a Political Officer on the Peshawar Border, very soon made his mark in the handling of local tribes, partly owing to the Afghan blood in his veins. Stationed for some years with the Guides at Hoti Mardan, he very soon acquired such valuable influence over tribal headmen that the Punjab Government refused to spare him for Afghan service, when

he was specially asked for by Major Louis Cavagnari, Deputy Commissioner of Kohat. Keenly disappointed at the time, he must afterwards have marvelled at the narrow escape forced on him against his will. For that hard refusal did veritably save his life.

Since 1843 there had been peace between India and Afghanistan, sealed by a treaty with the Amir that was fair enough of its kind. Yet there were many who still doubted the wisdom of again pressing an undesired Envoy on a people with a black record for treachery.

To all who prophesied evil, Cavagnari had his ready reply: 'If *my* death sets the Red Line on the Hindu Kush, I don't care.' Nor did he seem to consider that there might be other deaths involved.

In London wise old John Lawrence—a stalwart of the 'backward' school—spoke his mind bluntly as usual: 'It is madness. They will all be murdered—every one of them.'

And murdered they were—everyone, except that gallant few who died fighting in the epic defence of Kabul Residency, led by Lieutenant Walter Pollock Hamilton of the Guides—at three-and-twenty a hero in the grain. How his little escort of Guides fought on after he fell—deaf to the appeal of their fellow Moslems—and died to a man, I have told in detail elsewhere, together with a full account of the Second Afghan War.¹

So more lives than that of Cavagnari were sacrificed to a political move—and the Red Line was not set upon the Hindu Kush. The war, forced on India by that tragic episode, ended in victory for the British, while it proved conclusively that the Afghans would never tolerate an army of occupation. Yet, with individual Englishmen—owing to a masculine affinity and a robust sense of humour—they fraternised more readily than with many Asiatics; and the same may be said of Pathans. Curiously compact of good and evil qualities, reared in scenes of hideous treachery and merciless revenge, they are imbued with distrust of all mankind; yet proof abounds that, to any British officer

¹ *Kabul to Kandahar* (Maud Diver).

who can break through that hard surface and win their confidence, they will render unswerving allegiance. The Pathan will follow a brave leader through hell-fire ; but he will never throw in his lot with India ' or work with Britain to change the wild freedom of his hills into an ordered political democracy.' Personality is all. And Robert Warburton possessed a racial capacity for understanding and dealing with Pathans ; yet it took even him years to get through that thick layer of mistrust.

And what was the result ? He tells it himself.

' For fifteen years I went about unarmed among these people. My camp was always guarded and protected by them. The deadliest enemies dropped their blood-feuds, for the time being, in my camp. Property was always safe ; and time after time have the Afridi elders supported me against their own *Maliks*.' ¹

Yet there was nothing of the typical strong man about Warburton's personality ; and those with whom he must co-operate were among the hardest-bitten men in all India. His first experience of direct dealing with them was—like Mackeson's—persuading the Zakka Khel Afridis to keep the Pass open for military purposes during the Second Afghan War. And they were not easy subjects for persuasion. Strongest of Khyber tribes, they numbered five thousand armed men, every one of them a thief, a raider, a murderer by inclination, heritage and habit. Yet even among them he found a Malik whose friendship he relied on through the whole of his service.

In 1879 he was appointed Chief Political Officer of the Khyber, a post that set him on the road to his ultimate aim, the pacifying of a Pass that had been hitherto reckoned the most dangerous place on the whole North-West Frontier, dreaded even by Afghan traders and closed to all others. The extent of his success may be gauged by the fact that, during his long term as Chief Political Officer, the Khyber Pass was kept open and reasonably secure, without a single British soldier or sepoy stationed beyond Jamrud. But, in contrasting those conditions with the armed occupation of

¹ Chiefs.

to-day, it must be remembered that control, in Warburton's time, was mainly a political affair, based on good-fellowship between the tribal Chiefs and a British officer peculiarly fitted to understand their ways of thought, action and life. 'Understanding is the law'; and from the first he knew that the man who neither feared nor distrusted the Afridis would never have cause to do so. Let them once feel sure of confidence placed in them, and they will give in return unflinching loyalty and reveal themselves, at best, as brave and hospitable, passionate lovers, devoted to children and to flowers.

On the whole, it was Warburton's kindly nature, rather than force of character, that gave him an ascendancy such as few could estimate but men of his own service, who knew the tribes as only Frontier Politicals can know their mingling of treachery with a queer sense of honour, their grim philosophy expressed in pithy proverbs, their fiery tempers and complete disregard for human life, including their own.

He did not, as has been suggested, live among them as one of themselves; but he believed in being accessible, in dealing with the tribal Chiefs direct rather than through the unsatisfactory system of middlemen: a system that doubtless may have been necessary in very early days, when no officer was allowed to cross the Borders; but, like many original necessities, it outlived its use. Warburton himself deemed it a more frequent cause of trouble than even the Mullahs, those adepts at stirring up strife in the name of religion. The position of the local *Arbāb* (middleman) was almost that of Envoy on behalf of the Political Officer in all dealings with tribal councils; a position giving him the kind of power peculiarly apt to be misused in the past. None but men favoured by the *Arbāb* could gain access to the Political Officer, and then only on payment of huge bribes. The system had been roundly denounced in the 'Forties by Herbert Edwardes, Deputy Commissioner of Bannu. Mackeson would have none of it. Thirty years later, still flourishing, it was barred by Warburton, who recorded his firm conviction that the majority of wars between the

British Government and the Pathans have been due 'entirely to the evil intrigues or machinations of Arbābs, employed by us to do *our* work with the tribes'; yet the discredited system continued to flourish for another seventeen years.

In April 1880, after a decade of strenuous Border service, Warburton's health gave way and he spent a year in England, mainly in doctors' hands. Not until the spring of 1882 did he return to his loved Borderland, to a Khyber changed indeed.

As a result of tribal disturbances caused by the Second Afghan War he found his peaceful Pass occupied by five thousand troops. No armed Afridi, unless he were in British service, was allowed to intrude upon his own defile; and caravans now worked regularly twice a week between Peshawar and Kabul. Certain forts in the Pass were held by irregular tribal levies, raised as Khyber *Jezailchis*¹ in '79; now drilled and equipped as regulars and christened the Khyber Rifles—a name of which they afterwards had good reason to be proud.

Warburton soon renewed his fellowship with former friends among the Afridi Chiefs; and his tale of one famous old aristocrat, turned eighty-four, throws a lurid light on Afridi methods and character.

Twenty years earlier this resourceful villain had paid the equivalent of £100 to have a rival Chief killed in his own fort, so that no suspicion might arise: an astute move that left the murderer Chief of his whole tribe. In that capacity, he proceeded to marry both the mother and the widow of his rival; so that mother and daughter became co-wives of their former enemy. By the mother he had his eldest son; by the widow three or four more; strapping turbulent Afridis all. Thus good to his tribe came out of evil; and the old reprobate flourished, intriguing to the last against a financially 'squeezeable' Indian Government.

Of quite another quality was Warburton's first and truest friend, Malik Wāli Mahomed Khan, a man so singularly upright that it needed constant vigilance to save him from

¹ *Jezail*—Pathan rifle.

being ruined by his own honesty—a fate that actually befell him a few months after his English friend had left the Khyber for good. As a dove among jackals, so is an honest man among thieves.

If Warburton himself gained little by his own honesty, he did thereby win the lasting confidence of a mistrustful race of men. With his friend and Assistant, Sirdar Aslam Khan—a Barakzai Afghan—he enjoyed a seven weeks' trip into the Khyber hills, needing no protection other than the Sirdar's well-known loyalty and his own policy of trusting the tribes. Wherever his camp might be, they knew that all men—even feudal enemies—could meet there as on neutral ground. 'No enmity in Warburton Sahib's camp became a golden rule, unbroken for fifteen years.'

'I found that the people were better pleased,' he wrote, 'when they felt assured that I trusted them entirely with my safety. So I always went about with only a walking-stick in my hand': a gesture of courage and confidence that could not fail to be respected by the Pathan.

In the summer of '85 great doings were followed by great disturbances in Northern India. The new Afghan Amir, Abdul Rahmān Khan—settled by the British on his unstable throne—had proved to be a remarkable man. Under his rule—for the first time in Afghan history—protection of life and property was accorded to every individual throughout his kingdom; and in March 1885 he came down through the Khyber for a regally planned meeting with the Viceroy, Lord Dufferin, at Rawal Pindi.

The royal retinue amounted to a trifle of sixteen hundred men, seventeen hundred and fifty ponies, with countless baggage camels; all to be fed and watered and encamped by the Khyber Political Officer, who was also responsible for guarding the sacred person of the Amir. Plans must be made for a given date; though the monarch, no slave to time, would probably overshoot it by a week or ten days—as he actually did. And in the matter of weather his proverbial luck deserted him. At quite the wrong time of year rain, and ever more rain, fell without ceasing from the

end of March to the end of May. The magnificent camp prepared at Rawal Pindi, with parades and social gatherings, was drowned out from start to finish. But, in respect of every major concern between the two countries, all went well. Neither side had any desire for a third Afghan War : a calamity that did not recur for another thirty-four years.

3

The period that followed was devoted by Warburton to plans for defending the Khyber, increasing the water supply and keeping the road in repair : a desperate business when floods came through the Pass destroying whole stretches of it that must be rebuilt, over and over, with very inadequate means.

'Against this enemy,' wrote Warburton, 'we had no remedy. We could only exercise patience and begin work afresh' : the tale of most engineering work in India, where the god Climate unceasingly 'brands and burns his nothingness into man.' Yet, on the whole, he remains master of his conditions. Nowhere have more notable feats of engineering been achieved than in India. But of these the half cannot be told.

Happily for Warburton, whatever his difficulties, he never had to cope with tribal opposition. Every year of his stewardship increased the Afridi's confidence in him and all his works. It was his own Punjab Government that so dishearteningly failed him ; allowing him inadequate money, giving him no help when catastrophic interruptions involved stoppage of important work.

He was however cheered, at that time, by the coming of Sir Frederick Roberts—then Commander-in-Chief of India—in whom he found a personal friend, a keen advocate of all measures that concerned the Khyber Pass ; and in July '87 he welcomed yet another Viceroy, Lord Lansdowne, to the region he had made specially his own.

It was then that his hopes were raised in the matter of an

enterprise that he had very much at heart : a railway line from Peshawar to Jamrud. By this time his faith in the Punjab Government must have petered out. But there actually came a railway engineer, who spent some months with him and seemed very busy over the survey of his desired line. With the passing of the summer he vanished, leaving no trace of a line, no hint of return. Year after year that simple line was surveyed—without any visible result : till at last, in the fifth year, came one who said he was armed with definite orders to complete it. For one month he stayed in Warburton's quarters, but never laid down a yard of permanent way. Then he, too, vanished without explanation—never to return.

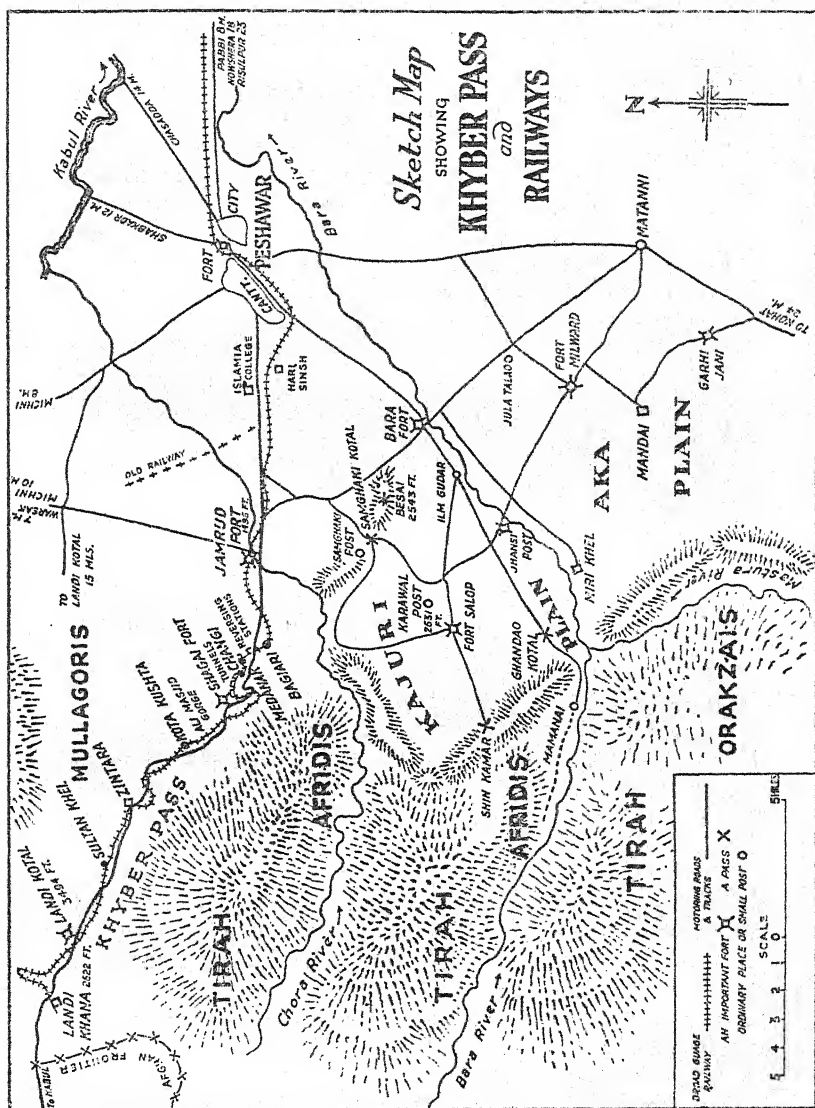
Ten years later—when the whole Frontier was aflame and a Peshawar-Jamrud line might have saved the situation—it had not even been begun. What tangles or obstructions of officialdom lay behind that strange tale will never be known.

More cheerful is Warburton's account of the Khyber Chiefs conducted by him on their very first trip to India in January 1888.

Beyond the Indus, 'Father of Rivers,' they entered an unknown land. Passing through the Punjab and United Provinces, the train ran over immense bridges, through cities of great age and size, while the chieftains sat gazing at it all 'without a single change of feature, as if such marvels were met with every day in the Khyber Pass.' Only as limitless distances unfolded on all sides, there began to dawn on them some idea of the length and breadth and immensity of this India ruled by the white Queen Empress, six thousand miles away.

At last on a clear January morning—Calcutta : a revelation of streets and houses and shipping, more impressive to their practical minds than miles of open country ; a Viceregal garden party ; women, barefaced, mixing publicly with men ; the Viceroy in person greeting them with kindly correct inquiries, and a vast refreshment tent where they were served with cakes and ices.

Warburton, knowing their suspicion of strange food, had



warned them in advance not to refuse anything offered to them. He would be responsible that the refreshments should contain nothing that they ought not to eat.

'Sahib'—the chief Malik solemnly answered him—'if you give us poison on this occasion, we will eat it.'

So they eat with relish, and without defilement, in full view of a curious crowd that gathered round the tent to gaze at those jovial, bearded unfamiliar beings. And when they had eaten they asked leave to say their evening prayer. Unperturbed by curious gazers, they removed their puggaris, turned towards Mecca, bowed their foreheads to the ground and prayed.

After Calcutta—Bombay, where they were lodged in a magnificent house; and from its roof they beheld a wonder greater than all—the ocean, called by Indians '*Kāla pāni*,' the black water.

That ocean-world, blue-green and laced with foam, rolled on and on, past Aden and Egypt, to unimaginable England. The Maliks—impressed by the sight of so much water—remarked that it would be a good thing to have some of that in the Khyber. Eager to taste it, they were dismayed to find it bitter-salt, not good for anything except a highway for ships.

On that lively highway they journeyed homeward from Bombay to Karachi. Deceptively smooth at first, it delighted the Chiefs; but delight vanished when the ship struck a blizzard, and the stalwart Afridis were prostrated one after another with the misery and indignity of sea-sickness. Land travel for them in future was their rueful decision, long before Karachi released them from the King Emperor's highway.

Back in the Khyber they found their fellow Pathans more sceptical than impressed by their tall tales of genuine experience. One of them, a few weeks later, came into Warburton's office with a dejected air.

'Sahib,' he dolefully confessed, 'my people will *not* believe one word of the truths I tell them. Now I will not answer any more of their questions.'

So it might be if one rose from the dead to tell the people



Sir Robert Warburton, K.C.I.E., C.S.I., and
Lieut.-Colonel Aslam Khan, C.I.E.



Going through the Khyber : old style.

of earth his experience of life in another body, in another world.

For the gradual process of pacifying the Khyber Warburton had need of police posts and a fortified serai at Landi Kōtal. But the mere word police was anathema to the Pathans. Year after year every post he began to build was demolished; till, in the end, his quiet power of persistence and persuasion carried the day. Confident in his concern for their interest, they accepted the posts and the fortified serai. They even permitted the survey of a six-foot road thence to Peshawar that had been Warburton's dream for years. Unluckily it proved not wide enough for the passing of tongas, *ekkas* and country carts. To increase the width was a simple matter; coolies and material available; no objection from the tribes. All Warburton needed was a command from headquarters to carry on. After due official delays, the command arrived—to drop the half-built road altogether. Warburton—chafing under that inexplicable decree—must perforce leave unfinished 'a most useful and necessary work.' In bitterness of heart he wrote, 'All arrangements for completing the road were simply scattered to the winds.'

Like the abandoned railway, that road was still unfinished in 1897, when it would have proved an asset beyond price.

As in the vital matters of the road and the railway, so in the still more vital matter of his requests for a young British officer to be trained as his successor, he pleaded persistently—and pleaded in vain. Equally in vain he begged repeatedly that two or three British officers might be allotted to his Khyber Rifles to increase their efficiency and status. Their Commandant, a fine Afghan officer—Lieut.-Colonel Aslam Khan—was no longer young. When he retired, there would be no man of his quality to take his place; and the little force palpably deserved the stimulant of British leadership. But although Warburton's reasonable request bore no fruit, his peaceful schemes for water supply and transport went steadily forward, unassisted if unobstructed by Heads of

Departments; and, in 1890, the value of his unobtrusive work was implicitly recognised by the letters C.S.I. after his name.

Twice, during his charge of the Khyber Pass, he had the privilege of conducting a Viceroy through the whole length of it: first Lord Dufferin, then Lord Lansdowne. And it was with the last that Prince Albert Victor, Duke of Clarence, visited the Peshawar Border including the famous Pass, where he personally decorated certain men of the Khyber Rifles.

An episode recorded of the Prince, at the Great Pindi parade, is worthy of mention as typical of the way in which the British Royal Family wins hearts all over the Empire.

The parade culminated in a march past of all arms before the Prince and Sir Frederick Roberts; and among the Indian spectators was a landau containing certain Chiefs defeated by Roberts in the Second Afghan War. With them sat his Kandahar opponent, General Ayub Khan, now virtually a prisoner in British hands; and the young Prince, after a few words with Sir Frederick, rode off unattended towards the Indian group.

Within a few yards of the carriage he drew rein and saluted England's former enemy: a simple, spontaneous act of courtesy that electrified the crowd. Nothing could have more deeply impressed the Khyber Chiefs, who frankly voiced their admiration.

A Zakka Khel was heard to say in Pushtu: 'Grandson of our Queen Empress, future heir to her throne—and he rides up to salute a man who has ever been England's enemy. A marvel indeed!'

Many prayers and blessings were offered on behalf of the Prince that day; yet he left Pindi quite unaware of the effect produced by his kingly act of courtesy and consideration.

Warburton heard more of it later from his Khyber friends. Well they knew the former enmity of Sirdar Ayub Khan.

'Yet now I have seen'—concluded his friend, Wāli Mahomed—'the future King of England and ruler of India

go forward, in the presence of all, to salute his captive. A noble act. It proves that you English are fit to be rulers of this country.'

Two years later, when Prince Albert died, grief among the Khyber Chiefs was as genuine as the grief in British cantonments : so susceptible is India to a genuine aristocratic impulse of the heart.

And still peace endured in the Khyber—the peace of Colonel Warburton's making ; though it is not clear whether he received full credit for this, even from British authorities at Peshawar. Sir Frederick Roberts understood and gave honour where it was due.

In the winter of 1890-91 he held a big parade at Peshawar, and of course he must ride through the Khyber with Sir James Browne—'Buster' Browne, of the Quetta railway and the Grand Trunk Road, now Quartermaster-General of India.

Alone they rode, with Warburton and a couple of troopers from the Khyber Rifles ; practical proof of the changes wrought by Warburton's personality and policy of trust.

Sir James himself remarked on the fact to his companion : 'Here we are—Commander-in-Chief and Quartermaster-General with the Khyber Political Officer—riding safely through these wild hills with no more escort than two Afridi troopers. If this was told in England to any officer of the old Punjab school, he would refuse to believe it.'

In view of that significant change, well understood by soldiers, it is difficult to fathom the official attitude of Punjab authorities in Peshawar ; the persistent refusal or ignoring of his urgent pleas for the support he required, not on his own account, but in the interests of the whole Khyber region, which, in ten years, he had transformed from a mainly inimical No Man's Land into a region of friendly, first-rate fighting men.

Yet, when war threatened again in the Black Mountain country, Peshawar authority refused his request to accompany his own Khyber Rifles, who volunteered for service. From the Maliks he had a written assurance that the peace of the Pass would be kept by them if he were allowed to go

as Aide to his very good friend, Lieut.-Colonel Aslam Khan. The answer remained in the negative.

As it chanced, Aslam Khan was disabled at a critical juncture, and the force was left without a leader through no fault of its own. The few British officers asked for by Warburton had not been given.

Again, when he was obliged to dismiss his Indian assistant for constant intriguing with the Maliks, he tried vainly to secure another man in his place. For almost a year he wrote letter after letter, pointing out his urgent need for an assistant, preferably a British officer, who would work loyally for the corps and be qualified to replace him in due time. Not a single letter was answered; and he himself had reason to believe that none of them ever reached Government headquarters at Lahore.

No wonder we find him writing: 'It made me jealous to look at the lists of military officers lent by Government to Gilgit and Chitrāl Agencies—twenty or more of them in the Quarterly Civil List; and to find such difficulty in getting even one officer to help the Khyber Staff.'

The one whom he did at last secure stayed little more than a year, being dissatisfied with his status under the Punjab Government, after Political service that was directly under the Simla Foreign Office; and Warburton could not blame him, though he ruefully saw himself bereft of the trained successor whom he fancied he had secured at last. Too well he knew that the blank might not be filled for years, if ever; and his doubt was justified. The blank remained unfilled for three years: 'A delay,' he wrote, 'that was needless and positively wrong in principle.'

Alone and discouraged he carried on his thankless task. Men of that quality do not look for thanks. Their deepest satisfaction lies in the work itself. Warburton's heart was in the Khyber and in the welfare of its people; but he must needs earn a livelihood; and his slender pay suffered an added strain because his wife and children, unable to be with him, must be maintained elsewhere. After thirty-two years' service he was receiving the reduced, inadequate pay of a bare £550 a year. Long leave in England was due

to him, yet he could not afford to take it. In a letter to the then Lieut.-Governor of the Punjab he clearly stated his case and his difficulties, hoping that his achievements might entitle him to some human consideration. Vain hope : no answer, no acknowledgment was ever received.

Further disheartened, he must spend his home leave in the usual hill station, with no reviving change from the social and official atmosphere of British India. Nor could the health of his delicate wife be renewed by a breath of English air. So he returned to his Khyber ; and Mrs Warburton to her husbandless home ; and the work went forward with increasing aid from the tribesmen, who knew a '*pukka* Sahib' when they found one and gave him the active loyalty of their kind.

In 1896 he was writing of Landi Kōtal that the hundreds of mulberry, peach and almond trees planted in the fortified serai were making splendid progress ; and on towards Landi Khāna the grand reservoir supplied three immense tanks of good water, with an open trough on the road for thirsty animals journeying up and down the Pass. 'All this,' he adds, 'was the work of our engineers, carried out with friendly help from local tribes ; never invoking outside aid or causing a moment's anxiety to Government.' A large serai had also been built to shelter caravans and travellers from the violent rain-storms that hurtle through the Pass : a long-standing need supplied at last.

But by now his time as Warden of the Marches was nearing its end. In early '97 he could look back on eighteen years of almost unceasing work that had been very much its own reward. Year after year, with no aid from Government, roads had been kept in repair, the fortified serai built, the water supply secured. British or Indian property had become as safe in the Khyber as in any part of the country. The political horizon was virtually unclouded. There were now 2500 Afridis in the Indian Army ; hundreds drew pensions and all shared in Khyber allowances : a record of which any man might feel reasonably proud. Yet so unassuming was Warburton himself that he was probably regarded by official Peshawar as a semi-Afghan, shy and unsociable,

happier among his Maliks than in the Club or the drawing-rooms of a smart military station: true enough, that last, no doubt.

It was in May of that year, a few months before his time was up, that he left the Khyber Pass and his countless tribal friends, who thought no shame to weep in bidding him farewell. To the pang of parting was added the deplorable fact that, in spite of constant pleading, he must leave his charge without any trained British officer to replace him.

In his own words, 'What I had dreaded, and done my best to avoid, was now apt to happen. Had I received a British officer, when I pleaded for one, he would by now have learnt the work, made friends with the Maliks and the tribes. He could have stepped into my place and been given another assistant to learn the work on the same principles. Only so could the tradition—that had proved so successful—be carried on. The little extra cost, compared with the campaigns that Government neglect involved, would have been a trifle. But'—he patiently adds—'others knew better; and when my day of departure came, there was no one to take my place.'

Failing a British officer, the important Khyber charge was entrusted to Colonel Aslam Khan, whose pension papers had been already sent in; and the command of the Khyber Rifles was given to Captain Barton of the Guides.

On 10th May 1897 Colonel Robert Warburton, C.S.I., left Peshawar by the Frontier Mail, with never an idea that in a few months he would be recalled to face the fruits of a policy he had vainly striven to annul.

4

By good chance—that looked more like a stroke of fate—Warburton decided to spend three months in Simla before leaving India. There he received from Government a formal acknowledgment of the credit due to him for the successful working out of Khyber arrangements initiated in 1877, for

securing the safety of the road and keeping up friendly relations with the tribes; work that, in earlier days, had involved much personal risk and experience in carrying out a novel task of unusual difficulty. To him it was admittedly due that the Khyber, on a *kafila*¹ day, was now 'as safe as any highroad in India'; that the Khyber Rifles had developed from an irregular force into a fine corps, keen for active service under the British Government, even outside their own land. These two feats, it was added, 'form a lasting memorial of good work not to be assessed by decorations or awards.'

Yet already, in his peaceful Khyber, a major storm was brewing, incited by powerful Mullahs whom the Afridis dared not disobey. Strings were also being pulled by the Afghan Amir for the fanatical reason that Greece—a Christian nation—had been defeated by Mahomedan Turkey; and Moslems everywhere had been urged to foment a Holy War against the infidel. In June, Warburton had actually warned the Simla Secretaries to Government that a great wave of fanaticism was surging through the Frontier. But again—'Other people knew better.'

The man who spoke from eighteen years' experience was informed that recent British successes in Malakand and Swat had 'broken the back of Mullah fanaticism for ever.'

He knew otherwise; but even at the eleventh hour he was not given the chance to prove his words.

The first move that gave the lie to secretarial illusions was a sudden attack on Shabkadr Fort, eighteen miles from Peshawar, by the Mohmund tribes of that region. It was followed by news from the Tirah that Mullahs were inciting the Khyber Afridis and Orakzai tribes beyond Kohat to make open war on the British. Not until then did Warburton receive an urgent State telegram: 'If Government propose to employ you specially, with regard to Afridi affairs, would you be willing?'

His answer was despatched at once by his orderly: 'Ready for any Government service, if required.'

¹ Caravans.

That was on August 13th ; and for eight days he vainly awaited orders—vainly looked for news from Peshawar, that was not flashed by wireless forty-five years ago.

The news, when at last it came, was serious enough.

A *lashkar*¹ of Afridis—said to be ten thousand strong, stiffened by fifteen hundred Afghan Mullahs—had appeared, in their swift and sudden fashion, not far from Ali Masjid. Thence they had launched a series of aggressive demands : (1) that all British troops be at once withdrawn from the Samāna Ridge beyond Kohat and from the Malakand ; (2) that the salt tax be lowered ; (3) that their women, who had escaped over the Border, be sent back to them to have their throats cut.

Warburton, from personal knowledge, was convinced that these demands never came from the Afridis—who had no grievance against the British Government—but from some aggressive Mullah ; and that the tribal assembly feared to tell the truth about it.

‘What they expected us to do,’ he wrote in the sadness of his heart, ‘or what they hoped might be done to avert the catastrophe of war with a Power whose might they knew only too well, must be left to the imagination. We were in for what I had laboured all my years to avert—a great Afridi war.’

Events rapidly confirmed his dire conviction.

Afridi hopes of drastic British action were not fulfilled. Peshawar authorities, military and civil—for some unfathomed reason—did precisely nothing ; though it was clear that an attack on Landi Kōtal would be the opening move.

There, Captain Barton of the Guides was in command of the Khyber Rifles garrison ; and amazedly he received a hurried recall to Peshawar. He went at once, leaving all his kit, expecting urgent instructions.

The only order given him sounds barely credible. He was not to return. In the hour of crisis he was virtually bidden to desert the Fort, which his Khyber Rifles must hold against impossible odds. In addition, he must lose all his

¹ Tribal force.

personal belongings. Yet there were in Peshawar 9500 British and Indian troops forced to remain inactive, while five hundred loyal Afridis made a desperate stand against a formidable number of their own people. What political motive lurked behind that unaccountable inaction has never been revealed; but in the words of a high official, it was 'a day of pain, grief and humiliation for every Englishman in India.'

As for the Afridis, left in the lurch, it has been asserted that they made a poor defence of the Khyber forts. We have quite another story from Sir Thomas Holdich, K.C.I.E. : 'Afridi against Afridi, a stalwart fight they made of it. Many old scores and family feuds were wiped out in that battle. More than the weight of the rupee kept the Khyber Rifles true to salt. Their own peculiar sense of honour holds Pathans of all degrees; and splendidly the Khyber Rifles fought at Landi Kōtal till they could hold out no longer. Their Afridi Commandant—a former Subadar of the Guides—stoutly upheld the tradition of his Corps. With him was one son, while two others were with the attacking Afridis, who appeared in strength on the plateau, having already captured and destroyed three small forts between Jamrud and the Kōtal.

Gallantly his small force held out; and when his own two sons were sent forward to propose terms of surrender, their father threatened to shoot them both if they did not retire.

So the fight went on, till the gallant Subadar himself had been shot through the head.

What remained of the Rifles achieved an orderly retreat to Peshawar, whence no single soldier had been sent to support them. Again I quote Sir Thomas Holdich : 'Over the Pass left to its fate and the consequent loss of prestige, apart from all that followed, it is best to draw a veil. There *can* be no excuse for it.' After all that, it was admitted—too late, as usual—that the Punjab Government had misjudged the whole situation, and was therefore quite unprepared for a general flare-up; that conditions were officially reported as 're-assuring' when forts had been taken and villages burnt not far from Peshawar.

And throughout these disastrous events Colonel Warburton, whose influence was never more urgently needed, remained perforce in Simla, waiting for orders that never came.

The news, when it did arrive, filled him with dismay. To a friend he wrote : ' My heart is very heavy over this hideous disaster, which could have been staved off even to the day of mischief. How easily, in a few days, the labour of a lifetime can be destroyed.'

Inevitably word went forth along the whole Frontier that the British had lost face and were afraid. The Orakzais, beyond Kohat, attacked forts on the Samāna Ridge ; and by September 15th—a month after Warburton's wire—the local rising had flamed into an Orakzai-Afridi war. Too well he knew that if a trained successor had replaced him, and the discredited middleman system had been abolished, that deplorable page of history might have been differently written.

General Sir William Lockhart, a distinguished soldier, was deputed to command the British force despatched to regain all that had been virtually flung away : to punish Afridis who had been stirred up by the power of their Mullahs and the pulling of strings from Afghanistan.

Lockhart—knowing Warburton—at once asked for his services as Political Officer ; and even he, it seems, had some difficulty in securing them.

' I am convinced,' wrote Warburton afterwards, ' that, without his intervention on my behalf, I should never have shared in that campaign.'

He did share it on the staff of a Chief whom he had every reason to admire as a soldier and a man ; but nothing could mitigate the pain he felt at fighting the Afridis, invading their sacred Tirah and destroying their fortified homesteads : a complete wrecking of the policy he had acted on successfully for eighteen years.

The story of that brief campaign has been told many times over. It was no mere punitive expedition ; the Afridis being the most numerous and formidable of the Border tribes ; their resistance stiffened by the whole tribe of Orakzais beyond Kohat. It took 35,000 soldiers, British and Indian,

four months to subdue them; and that only after a bitter struggle which brought out the finest qualities of British officers and men and their Indian brothers-in-arms.

With pride he records how all Indian Army Afridis fought loyally against their fellow tribesmen; how his own four orderlies proved faithful to him in the many trying and perilous duties he required of them, though well aware of the cruelties they would suffer if taken prisoner. Even enemy Afridis told him they had no desire to fight the British or to attack the Khyber; but they dared not disobey the Mullahs who came down in force determined on a *Jehād*.

Finally, when defeat was admitted, when old men of the tribe lamented the wanton destruction of their homesteads and valleys, Warburton spoke to them in sympathy, explaining that it was out of his power to help them.

And they answered with tears in their eyes, 'Never mind, Sahib, whatever happens, we are earnestly praying that *you* may not be injured in this campaign.' A more human tribute he could hardly have desired, disheartened as he was by his own acute sense of failure to avert a calamity that was almost more than he could bear.

The official reward of a knighthood for his services could do little to ease the bitter knowledge that he might have averted all had he only been sent for in time. To the question 'Why not?' no answer has ever been forthcoming.

The end of that preventable campaign marked also the end of Warburton's Indian service. His thirty-seven years had been most of them spent on the Border; many of them years of lonely exile, before the motor-car banished isolation; years of endless difficulty and depressing influences, not least the unaccountable and often unfair treatment he endured from the Punjab authorities of that day. From the Simla Government came ultimate recognition, in the form of his knighthood, of all he had achieved through his personal influence and contact with those least amenable of human beings, the tribes of the Khyber Pass. Among them his name and fame have been passed on from father to son.

How much he owed to his Afghan heritage has been clearly shown. It may safely be said that few purely British officers

of his period would have been content, as he was, to spend eighteen years in the Khyber, with its climate of violent extremes and the virtual banishment involved from social station life ; minor drawbacks that are barely mentioned in Sir Robert Warburton's modest account of his stewardship. But ' how well he fulfilled his trust is on official record and will have its lasting place in the history of British rule in India.'

Yet even before he left the country he had seen the major part of his life-work needlessly and expensively undone.

At that time he had no thought of writing his own account of those Khyber years. He was only moved to do so by a suggestion from Edward VII., then Prince of Wales, to whom the book was dedicated by special permission. He wrote it simply as a record of his stewardship, not with any idea of writing about himself. On his return home—saddened by the shame of losing the Khyber and all it involved—he still cherished a hope of further employment in England or India. But it was not to be. An insidious disease that had troubled him for years became intensified by the strenuous campaign and the heartache it involved. He returned home only to set down his testimony of personal service and—to die.

One who knew him has written, ' The loss of the Khyber after so many years of faithful guardianship, preyed most heavily upon his mind. It is no exaggeration to say that it broke his heart.'

Among distinguished Border Political Officers there have doubtless been many who stood higher, as such, than Sir Robert Warburton. One need only name the famous pioneers of the Lawrence period, Edwardes, Nicholson and others ; or, more recently, men like Sir John Maffey, Sir Harold Deane and Captain Cecil Down, of whom too little is known. Called by the tribesmen ' King of the Tochi,' he was killed soon after thirty, having already made his mark.

Warburton owed his pre-eminence largely to his peculiar personal influence and his understanding of Pathans ; but mainly he is remembered for his unique achievement in transforming the Khyber Pass from a wild No Man's Land to a normal highway of the utmost importance whether

for peace or war ; and, in the process, converting inimical Afridis into a more or less friendly tribe, freely enlisting in the Indian Army.

By the signal merit of accomplishing these changes without military help or civil encouragement, except in a few personal instances, he may justly be said to take high rank among many of his kind who have unobtrusively done great things—and remained unsung.

2

KHYBER RAILWAY

'The power of a great purpose to . . . open the way, when there seems to be none, is a daily miracle.'—ANON.

1

THE Tirah Campaign which virtually closed the nineteenth century also closed an era in the history of that curiously fascinating region, the Khyber Pass. Its new era opened promisingly with eleven years of peace: a boon conferred on the Border by one of India's most eminent Viceroys—Lord Curzon.

Arriving in 1899, he found fifteen thousand regular troops holding the Khyber Pass, the Tochi and even, in the utmost north, Chitral. These he promptly reduced to four thousand, by way of balancing the pendulum swing of 'backward' and 'forward' policies. Obviously the complete occupation of the whole trans-Border country would tie up too many troops at a disproportionate cost. Yet complete evacuation would be misread by Asiatics, unable to understand the curious British habit of conquest followed by withdrawal.

Clearly the true solution was a middle course. Let the tribes themselves be given a chance to keep order within their own region, by the raising of tribal levies under British officers—a form of mobile militia; and behind the Irregulars would remain the normal garrisons in the old Border stations.

The success of his policy was ensured by the master-stroke of creating a separate Frontier Province, transferred from Punjab control to direct relations with the Simla Foreign Office; and that in the teeth of strong disapproval from many older Punjab civilians, who regarded the transfer as an implicit slur on the finest Administration in India.

For over fifty years the change had been talked of, obstructed and pigeon-holed—the fate of most major changes in India. Lord Lytton, a 'forward' Viceroy, had been the only one since Dalhousie to revive the idea in one of the ablest minutes on Frontier administration ever written.

Lord Curzon—fresh to the country, but familiar with its problems—at once grasped the urgency of the Frontier question. He knew that a Viceroy works always against time; and while others discussed reforms he carried them out. As usual, with Lord Curzon, there were defects of procedure; but the whole subject is too controversial to be fully dealt with here. Suffice it that the actual transfer was justified in the issue: Border affairs more swiftly settled, greater vigilance in suppressing crime, better and closer relations between British authorities and the Border chiefs. On the whole, though not faultless, it may be said to have crowned Lord Curzon's Frontier political work.

The military problem was the more difficult of the two, with Russia still a hovering menace in the North. Of the three main invasion routes—the Bolān Pass, the Kurram Valley and the Khyber—only the Bolān possessed the railway laid down in the 'eighties by Colonel 'Buster' Browne, who had emerged, after twenty years' service, as the most eminent railway engineer of his time; one that did almost as much for the Punjab as Robert Napier and Taylor had done in their day.

With men of that quality and skill available on the Frontier, no wonder great things were carried through in the teeth of inimical country and climatic curses. It is not too much to say that the Frontier railways in the Quetta and Khyber region surmount natural obstacles unmatched in India: a statement affirmed by Colonel Sandes, D.S.O., M.C., R.E.

'The men who surveyed and built those lines carried their lives in their hands. They sweated in unspeakable heat. They froze in bitter cold. Success depended on their personal example, courage and resource. They could not afford to relax. They waged a patient war against those in high places, whose

natural bent towards economy blinded them to the danger of invasion. It must be a source of pride to all Royal Engineers that officers of their Corps were able to produce such masterpieces as the Sind-Pishin and Khyber lines. . . . So year by year roads and even railways crept forward through these sombre gorges of the North-West. Yet the country still remained substantially the same wild, trackless maze of crags and defiles, the best school for military engineering that the world has ever seen.'

The coming of Lord Kitchener—an R.E. Commander-in-Chief—heralded a boom in Frontier railway schemes. Already the North, especially the Khyber, had caused much anxiety to Sir Frederick Roberts, with Russia still a potential threat in Central Asia. The twin roads through the Pass had proved insufficient for military needs; yet the essential railway had been vetoed as unworkable owing to steep gradients and restricted space. At that time, not even the encroaching motor-car had dared to disturb the silence of the Khyber hills.

'Given two Army Corps,' said Lord Kitchener, 'and a broad-gauge line through the Pass, India could defy all Asia.' But he himself—lacking railway experience—dismissed such a line as impossible. Engineering difficulties would, in his view, be insurmountable. Frontier war a certainty. Nor could the Viceroy gainsay his conclusions.

A few words with the Khyber Chiefs clinched the matter. Their jocularities gave place to scowls and mutterings of dissent. The fire-carriage might bring many good things, but it would kill independence—their breath of life.

'As one friend to another,' was their final verdict. 'It is forbidden.'

Even to that twofold discouragement the Viceroy had his answer: 'Impossible: forbidden. All the same—inevitable.'

But, at the moment, Fate seemed to accept the decision of Kitchener and the Chiefs. The inevitable tarried for more than twenty years, when a third brief, inglorious Afghan War emphasised the urgent military necessity for a railway

through the Pass—changed indeed since Warburton's day, yet in essence the same. Life, as lived by Abraham and Isaac, still impinged on the traffic of a machine-mad age. Along the new motor road sped military cars and lorries. Through the tangle of defiles clattered the now familiar 'Tin Lizzie,' packed with baggy-trousered Pathans bound for Peshawar. Landi Kōtal had become a detachment enclosed with barbed-wire fence and gate.

It was now to witness the greatest change of all; for, on this occasion, the hour did produce the man. Colonel Gordon Hearn, R.E.—a brilliant Engineer of thirty-two years' railway experience—was deputed to survey the Pass. A powerfully built man, with a massive head and deep rumbling voice, he looked as if he might prove a match for the unconquerable Khyber; and his looks did not belie him. In addition to his wide and varied experience he possessed a flair, amounting to genius, for 'a line of country' in engineering terms. His rapid and astonishing survey of the Khyber remains unique of its kind; and the eventual railway—deemed impossible for twenty years—stands as his acknowledged masterpiece.

Between December 1919 and April 1920 the whole length of it, tunnels and all, was 'located' on paper, plans and estimates taken in hand. Followed inevitable hindrances and delays, in that home of all hindrances, the Simla Government Department. And still the tribes—aware of earthworks at Landi Kōtal—kept up their menacing growl, 'It is forbidden.' Zealously they had erased every mark of the hated survey; vowed they would seize and torture any railway official who dared to enter their free land and clamp it down with iron rails. Yet their opposition was, in a sense, the least hindrance to a project that would involve incessant tunneling through shale, with merciful interludes of limestone. And where was labour to come from? Victor Bayley, deputed to construct one-half of the line, calculated that he would need an army of 20,000 coolies at least. The tribes would never lift a finger; and to down-country Indians the Khyber was a strange land full of murderous men, who regarded Hindus as scum of the earth. Yet into this hostile region

Bayley must adventure with no military escort, no police, no law, except obedience to local custom, leaving his wife and five-year-old daughter behind in a Peshawar hotel.

Hearn himself, at that time, was in England buying a formidable mass of material. And Bayley, a man of imagination, soon became aware of the prevalent Frontier atmosphere, noticeable even in Peshawar, more acutely so in the Khyber itself, where some hostile, mysterious presence seemed to lurk in the very hills. The long, slow look of the tribesmen seemed to say, 'This is *our* land. What make you here?'—a mute challenge to one who knew that he was out to shatter their rocks with dynamite and lay miles of railway through their inviolate Pass.

The more his practised eye studied its ridges and ravines, the more sceptical he felt about Colonel Hearn's plan that looked so perfect in design. He had yet to discover, on his own confession, 'the uncanny ability with which the line had been laid down on paper; how unerringly faults in strata had been used to help the train scale the heights.' Those forbidding hills could not resist the argument of dynamite—tons and tons of dynamite.

However, before all else, it was necessary to test the temper of the tribes; obdurate man, almost as hard as their own rocks. At present—while a camp and officers' quarters were set up at Landi Kōtal—they remained watchful and aloof.

Clearly the next move was to approach some influential Chief; and, after cautious inquiry, Bayley decided on a certain Sher Ali of the powerful Zakka Khel tribe. As a former Subadar in the Indian Army, he might favour the Sahib-lōg. Also he could speak Hindustani.

Thereupon Bayley set out alone to find the Subadar's village. Here and there he was joined by stray Pathans, all armed, crowding in upon him and seeming friendly enough; but, as he glanced round at their ruthless faces, sudden misgiving assailed him. Had his daring outrun discretion?

Completely in the hands of these thirty rough-looking specimens, he was visiting a lonely fortified village on an

errand that would render him unpopular, to say the least. Nothing for it but to keep a cool front and unshaken nerve.

The strong barred gate of the house he sought was opened by the Subadar, a stout elderly man, who came forward and shook hands in the all-men-are-equal Pathan style.

Now Bayley must give up his revolver—a gesture of placing himself under his host's protection; and his thirty companions came in with him; powerful men, who knew no law except that of tribal custom and the Eastern law of hospitality, the duty of host to guest.

Together he and the Subadar sat down on a string-bed, with rugs and cushions, placed in a narrow verandah facing a courtyard full of Pathans, more and more of them drifting in to hear what might be toward.

On a direct approach to the main question, the Sahib was forced to admit the damning truth that he had been sent by the Sirkar to build a railway through the Pass.

Dead silence; a scowling host; a menacing growl from the courtyard. At the least sign of irresolution they would all be upon him. The delicate matter must be approached as friend to friend; but his host, startled and angered, had no longer the air of a friend.

'A railway through *our* land?' he rumbled at last. 'It is *forbidden!*'

The audience in the courtyard sprang up brandishing loaded rifles, echoing, 'Forbidden—*forbidden.*'

Bayley, hiding his qualms, moved not a muscle till the shouting died down. Then—knowing their weakness for a debate—he suggested a discussion on the practical advantages of a railway: easier travel, cheaper food-stuffs and the like. In vain: such things were trifles compared with a threat to their sacred independence. To his plausible arguments they had only one answer; that muttered chorus, 'Forbidden—*forbidden.*'

For one critical moment the solitary Englishman sat there dumfounded, facing defeat. Then a lurking imp of humour prompted a novel idea.

'Listen,' he urged persuasively—and they listened,

impressed by his unperturbed air. 'A train through these hills could not dash to and fro at high speed. It must crawl slowly up steep gradients. It would be laden with rich merchandise. And the Zakka Khel'—he shrewdly insinuated—'do not always pay for their goods! Consider the many chances there would be—for looting those trains.'

That magic word, spoken half in jest, proved a brilliant stroke of strategy.

Sher Ali stared, half incredulous; then, as light dawned, he shouted with laughter and translated the joke to his fellows.

'The Sahib builds the railway. *We* loot the trains!'

The effect was instantaneous. Lowering clouds vanished. The stranger Sahib, who so well understood their love of a joke, was plied with refreshments—cakes and fruit, hard-boiled eggs and tea.

At parting the Subadar, having told off an escort, politely handed back Bayley's revolver.

'Build that railway quick, Sahib,' he chuckled 'that we may loot the trains!'

'Loot the trains!' echoed all, in high delight; and Bayley departed, blessing the Pathan sense of humour and the humanising effect of shared laughter.

At one stride he had overcome the main obstacle. He could now carry on with his Landi Kōtal camp, that was frankly hideous, set in one of the most desolate spots on earth: a sequence of rocky ridges, relieved only by juniper bushes and the few bright patches of flowers that could be induced to flourish in the officer's attempt at a garden. For wherever the Englishman goes he manages to carry some reminder of England about with him; and the men who were to spend five years of life in constructing the Khyber railway had more need than most of that reminder, however inadequate.

A climate of fierce extremes is intensified by the peculiar Khyber wind—that is less a wind than a torrent of air—cold in winter, scorching in summer; so violent at times that no survey work could be done owing to flying chips of shale that cut like shavings of steel. Even lorries and cars

would be forced to shelter behind a bluff from Nature in the mood of a Titan at play.

No wonder Bayley wrote, in his early Khyber days, 'I mistrusted those eternal hills with their quiet watch on the man who was going to thrust a railway upon them. What would happen when we started with pick and drill and dynamite to attack them in earnest?'

By normal reckoning, those few railway-makers, more or less exiled from their kind, living a hard life of danger and discomfort, should have been, on the whole, fairly miserable. Yet Victor Bayley, in a full and delightful account of his Khyber achievement,¹ can honestly write, 'I shall always count my five years there as among the happiest in my life.' Nor is the reason far to seek. Most men, worthy of the name, are happiest—even among the horrors of war—when one great purpose dominates the mind and unifies life. Congenial work, an aim to pursue, an end in view—these count for more than possible honours, welcome though they be. The work itself, demanding his utmost skill and power, is a man's true and lasting reward.

Thus the Khyber adventure was begun and pushed forward in defiance of every conceivable difficulty. Many of the early Pathan contractors had a fight to retain their work. Not a few were murdered. All workers on the line must be collected each evening by motor-lorry and housed in fortified posts, guarded by Khassadars, as the line was guarded by day.

The strain on the staff was severe. Several failed under it and had to be relieved of their duties. Only those with nerves of iron could endure it for long.

Bayley himself writes: 'The lurking atmosphere of danger had to be accepted as men accept the chances of being murdered by a motor-car in open roads; and the constant personal risk could not be allowed to interfere with progress of the work. It was all a part of the strain under which the white man lives in that region, where the hills

¹ *Permanent Way in the Khyber*. Victor Bayley, C.I.E., C.B.E., M.I.C.E.

themselves have at times a maleficent air of watching and waiting with some evil purpose hidden behind their stony aspect.'

To be out after dark was simply to court some murderous mishap; and Bayley wore his revolver everywhere, till a friendly Pathan pointed out that by doing so he tempted men, who bore him no ill-will, to 'acquire merit,' plus a coveted revolver, by sending a Feringhi to perdition.

So Bayley—like Warburton—went unarmed among those casual murderers, who would kill a contractor, as one kills a fly, simply to get his post; yet would not transgress their own peculiar code of honour; but his hut on Landi Kōtal was bullet-proof and guarded by Khassadars.

It is interesting to compare the response of those two men, so diverse in temperament and period, to the potent personality—as one may almost call it—of the Khyber Pass. Warburton—a semi-Afghan, steeped in the country and the people—took both more or less for granted. Absorbed in his work and in coping with official hindrances, he lacked the mental curiosity of a mind coming fresh to that unique region, the sensibility to atmosphere of the more imaginative and intellectual modern man, which adds interest to Bayley's record. But, if Khyber conditions had changed, both men had the same human material to deal with, the same capacity for appreciating its finer qualities.

Bayley writes in a later book,¹ 'I have lived among the Afridis and Shinwaris for some years; and I grew to like this virile folk very much. . . . I have discussed world politics with them, and been astonished at the wide range of knowledge possessed by those illiterate men, living in remote fastnesses. I have seen the horrible results of their hatred. I could tell innumerable tales of their strange mixture of laughter and cruelty. Yet, under all this incomprehensible mingling of character, I have "sensed" the existence of a highly gifted people who only need to have the cyclical curse of insecurity lifted from them to take their rightful place in the world as one of its most energetic and useful races.'

The Pathans themselves disown all link with India. They

¹ *Is India Impregnable?* V. Bayley, C.I.E., C.B.E., M.I.C.E.

claim to be of Semitic origin, like the Afghans, descended directly from a younger son of King Saul. Major Yeats-Brown and others find in them a certain affinity to the Scots of the mediæval age. They have, he considers, 'the congenital ability to become the Scots of India. Given mental discipline, they may yet make raids of quite another kind into the Plains. They may even astonish the world when they take seriously to education, as they are doing now. Their brains have not been fogged nor their bodies undermined by the insidious effect of India's climate.' Ugly streaks here and there offset their finer qualities; and as a race they seem to lack some essential attribute that makes for stability; but they do, on the whole, greatly like and esteem the best type of British officer, whose influence for good may be incalculable. Such friendships have always been the grand opportunity of trans-Border service; a chance to promote more than personal good feeling.

Sir William Barton, insisting on our need to win the loyalty and trust of the Frontier, writes: 'There is one course that has not really yet been tried—to establish friendly social relations between the British and the educated Pathan. Real friendship, real sympathy from the British would go far towards restoring confidence between the races. In that way the Frontier problem may ultimately be solved.' The value of such social intercourse is undeniable; but the whole question raises problems, on both sides, too complex for a passing consideration. To the Political Officer, at least, in his round of work, opportunities come more readily than to soldiers or to station dwellers; and Bayley, like Warburton, fraternised with the Maliks as time went on.

In his bullet-proof hut, with a large fireplace and two arm-chairs, he and his tribal visitors would sit on winter evenings, smoking and talking frankly as man to man. Murderers and thieves they might be, but quite as often they were men of character and culture, even men of the world. To most of them 'Warburton Sahib' had become an almost legendary figure, and tales of his prowess probably lost nothing in the course of repetition. Bayley's chief friend among them owned two cars, read Reuter's telegrams,

favoured the English and talked Eastern politics with shrewd intelligence. Like many of the finer Pathans, his end was murder by a jealous rival.

As winter passed, the tribes followed their Malik's lead ; for beneath their savagery ran a strain of masculine common-sense. Blankly ignorant of railway building, they were very much alive to the chances of profitable contracts, the beginnings of loot in an honest form. Now they withdrew their veto on imported labour. Skies looked clearer. Prospects improved. And presently, in defiance of all obstacles, there arose such a banging and thumping and clanging as those sinister hills had never heard in all their many thousand years.

The contractors began to enjoy themselves hugely, blasting and shattering rock with complete disregard for human life. Passing cars must take their chance of being flattened out or blown up. Any attempt at rules for road safety was simply treated as 'another of the Sahib's excellent jokes' ; and, safety or no, the work went on.

It led Bayley to discover for himself the unfailing accuracy of Hearn's original survey ; so perfect on paper that he had deemed it too good to be true. Now he could only marvel at the genius which had selected the line so swiftly and unerringly that the few deviations did not amount to more than a yard or two either way. Few engineers could accurately detect the gradient of an unseen line along a mountain-side ; but that was Hearn's peculiar gift. Nor was his inner vision ever at fault. His Khyber survey was the work of a genius hardly recognised outside his own corps ; and the railway—his lasting monument—is described by a fellow Sapper as 'the most spectacular feat of its kind in Northern India.'

Bayley, translating the vision in terms of iron and steel, found these on the whole more tractable than his human material. For not all the tribesmen favoured his cavalier treatment of their hills. His hacking and pounding and boring for tunnels seemed to them the work of devils rather than men ; and the shale in which he worked, with its

igneous volcanic intrusions, had a curious likeness to tribal character—easy to deal with, so long as volcanic tempers did not flare up. A chain of forts, manned by Khassadars, was built above the line; and labour still remained the principal problem, since even willing tribesmen were handier with the rifle than the spade; and the Indian coolie still shrank from rumoured villainies of the Pathan.

Finally, the problem—as often happens—solved itself.

Early in the winter certain curious creatures, called Kashmiris, began to arrive on the scene. Miserable specimens, miserably clad, they were terrified of the Pathans, who seemed to regard them as beings hardly human, too despicable even to be worth murdering. When they found themselves unmolested, courage revived. Labour camps and settlements grew up. The Khyber adventure flourished, and received fresh impetus from the re-appearance of Colonel Gordon Hearn, R.E., Engineer-in-Chief of his own inspired project.

He arrived from England with important purchases; and his coming brought into friendly—if sometimes difficult—contact two men of diverse personality; both at the moment men of one idea—the making of their ‘impossible’ railway.

Bayley, tall and wiry, with aquiline features, blue eyes, deep-set, and a quick nervous manner, was the very antithesis of Hearn—a rock of a man, unconventional in manner and method, as genius is apt to be. His rough exterior and deep grumbling voice often antagonised those who failed to penetrate the outer shell and discover the good-hearted man beneath, as Bayley came to do through their absorbing work in common. His own gift of understanding derived from an innate blend of the artist and the practical engineer. In Hearn the engineer prevailed; and there would be many arguments: Hearn, biting one corner of his handkerchief and tugging at the other, Bayley hotly contesting his own point of view. Yet he honestly admits, ‘when we came to run our instruments over the line, he was always uncannily right and I was wrong.’

Hearn's swift solutions for their many strange problems invariably hit the mark ; and Bayley soon perceived that he was dealing 'not only with a genius but with a *real* man.' Thus eventually those two—so unlike in all but their gift for engineering—were drawn into a close friendly understanding ; but it was not written that they should stay the whole course together.

In 1922 Hearn was transferred from the Khyber to Eastern Bengal : from Old Testament India to the political and literary India of Congress and Rabindranath Tagore.

The arrest of Gandhi, in that year, had a pacifying effect even on the Border that was already becoming tainted with politics, with which Bayley was not concerned except in the local form of ceaseless intrigues. Giving help where he could, he made many real friends. For, in spite of murderous interludes, British and Pathans have always tended to like each other. 'Between two adventurous races,' writes Bayley, 'deep calls to deep' ; and he found far more bitter enmity among themselves than ever between them and the English.

No end to the gruesome blood-feuds that scarred their whole existence, especially among the Afridis ; and Bayley encountered terrible examples of that barbaric, yet sanctified, custom. Such relentless cruelty, even towards an enemy, seemed almost unbelievable. Yet Bayley's office, like Warburton's camp, soon became tacitly recognised as a neutral zone where enemies could foregather without openly expressed ill-feeling.

A strange country ; a strange people. 'No white man could ever become quite acclimatised to either.' The prevalence of hatred and murder, the utter indifference to human life and inflicted pain, were simply appalling. When the Englishman rated them for their callous and continuous bloodshed, they would agree that it was an evil thing, and would take refuge, like Adam, behind Eve.

'It is our women who egg us on. No woman will look at a man until he has killed his enemy.'

Where even love—a strong thing among Pathans—is tainted with this lust of death, no wonder a haunting spirit

of evil pervades the land. From the hard clear sky to the stony fields it seemed to breathe hostility.

'There were times,' Bayley admits, 'when the feeling of danger would oppress me physically, almost beyond endurance. But I felt very strongly that there was something else—something definitely primitive and evil. I did not like speaking of this to my English friends, as they only laughed at me . . . and it does not do to let one's fancies have too free a rein. But when you have the luck to be building a work like the Khyber railway, you cannot help building a great deal of yourself into it. There is a sort of inevitability that . . . drags a man on, yet seems to be taking something out of him all the time . . . and an engineer comes so close to Nature, in all her moods, that I think he is the better man for giving his intuitions a chance to be heard.'

It was at night that these vague feelings of disquiet troubled him most. The winter nights in the Pass had a weird and singular beauty: the utter stillness at dusk; the indigo shadows of sunset, the brief twilight and astonishing brilliance of stars, the ghostly light-and-dark effects of a full moon; 'the silence—wonderful and immensely soothing.'

When he spoke of queer sensations to his Pathan friends they did not laugh; they knew.

His English soldier friends, living cheerfully together, had special leave arrangements; while he was more or less alone with the brooding spirit of evil. Sometimes at night he would stand outside his hut 'and *listen*—to the Silence that was not really silent.' There might be noises in camp, footsteps or someone singing; but, below all the natural sounds, he would be aware of a deep quiver or vital pulsing through those hostile hills.

'I felt,' he says, 'that we were somehow disturbing the Khyber with our hammering, digging and blasting, rousing all the powers of darkness from their sleep.' Inside Hearn's steep spiral tunnels, with compressed air hissing like snakes, the sensation became more acute; and by now he knew his Malik friend well enough to talk of such things when they sat together by the fire in his hut.

The wise Pathan treated him to a long slow look.

'I see, Sahib,' he said, 'you are one who understands. Many Sahibs, as with us also, think only of sport and women and laugh loudly at everything. It is good to laugh; but I am an old man; and I know there are many things that cannot be laughed at. It is not well to be out at night. There *are* demons in the Khyber. We all know it.'

Sitting there in the firelight he told many strange tales of his own experience; of midnight demons, 'great black things which run fast, making a thud-thud with their feet, and breathe with a hoarse panting sound'; of the dreaded *churail*—wraith of a woman who has died in childbirth—doomed to wander over the earth, with her feet turned backwards, and entice human beings to graveyards where demons rend and devour them. There were many others, he said, who could tell of authentic demon experiences; and those who talked thus were hard-headed men of natural intelligence.

But when Bayley spoke of them to his so-different friend, the English Padre, he was roundly chidden for giving place to the devil of superstition.

'This God-forsaken country is in the Old Testament age,' was the Padre's comfortable conclusion of the whole matter. 'Old Testament law—an eye for an eye, a tooth for a tooth. Not so neatly balanced either!'

His comfortable conclusions carried small conviction to the engineer who was also an artist. The sense of lurking demons and a hostile unseen presence was, for him, a reality not to be exorcised by the laughter of subalterns, or friendly chidings of the Church. But, before all else, his railway work claimed and held him.

Day after day, through increasing heat, he kept on at his hammering and digging and blasting, in defiance of all that Khyber devils could do unto him.

And the work went on. Nothing else mattered in earth or heaven.

2

'No adventure is safe. Life itself is an adventure, and neither is that safe. The moment we try to make life safe, we lose all that there is in it worth while.'—WINSTON CHURCHILL (Novelist).

The swift approach of a hot-weather that knows no merciful monsoon brought natural disturbances of quite another order.

A Pathan oracle—also a demon—had prophesied, in July, the worst storm that the Khyber had ever known : a prophecy that Bayley accepted as a challenge ; the supreme test of his work, so far as it had gone.

But there were months of furnace heat to live through before July. The breath of sun-smitten rocks in the narrower valleys became hardly bearable. The white-hot sky lost all trace of blue ; and rainless, electrical storms brought no relief, only sound and fury and a trail of destruction. The sand-fly was a burden, with its needle-pointed sting, so poisonous that it induced sand-fly fever. The once piercing Khyber wind became a blast from hell, shrivelling and desiccating a man till his thirst reached a pitch inconceivable to dwellers in a temperate clime : no mere dryness of the throat, but an urgent crying out of the whole being for water.

In a vivid paragraph Bayley evokes the sighs and sense of that grim region, when 'Nature becomes a gigantic laboratory for the brewing of storms.'

'Day after day the shimmering rocks and fantastic streams of overheated air bring strange mirages. Whirling dust-devils stagger across the valleys, appearing suddenly from nowhere and suddenly departing. A cloud not bigger than a man's hand grows in a few minutes to a menacing storm-cloud full of thin rattling thunder. . . . A dull rumble, and the ground is shaken by an earthquake which roars underneath. To an engineer there are a dozen signs of the great forces at work ; and day by day the tension grows. . . . It stirred my pulse to think of the great test, for which we were waiting.

'It is pleasant sometimes to do silly things when no one is there to laugh at them. I was alone with Abdul Gafur Khan—and he would understand.

'I turned to those grim hills; and raising my arms, I shook my fists at them.

"Understand," I cried in English, "the work goes on."

As the date prophesied by the demon drew near, anxiety clutched at the hearts of men whose work would soon be tested to the utmost.

Hall, Bayley's invaluable assistant, was with him now. Together they sat in Bayley's hut, watching the sky as it turned from blue to a brassy yellow murk shot through with malignant flickers of lightning, followed by the ominous mutter of thunder. From the darkling sky over Ali Masjîd came a continuous rumble of sound. The light failed. The wind moaned dismally. Then—not half a mile off—a cloud burst in a dense curtain of water, hiding everything. On it came with the roar of an express, rain lashing the ground. Lightning sizzled and thunder crashed with a deeper roar, close at hand. It was as if the storm sprang upon them like a celestial beast of prey.

For the next few hours the two men, in their hut, could only sit and listen—and think of their bridges, their embankments, their threatened railway.

Lightning kept up its weird shuddering illumination. Thunder crackled right overhead. And the rain—'Nature's invincible weapon'—was beyond description. Under the fury of that onslaught how could any work of man survive?

Hour after hour the two men sat on, trying vainly to talk against increasing pandemonium; till the climax came in one blinding flash—and all the electric lights went out.

Hall sprang up. 'That's *torn* it,' he bellowed. 'I'm off to bed.'

They awoke next morning to a flooded world. Their small, cherished garden battered out of existence. From all sides came rumours of disaster: telegraph poles down everywhere,

telephones out of work ; severe damage around Ali Masjid. But no clear news of the railway or the bridges.

A voice over the telephone from Landi Kōtal Fort—the Brigadier, thankful to find one wire intact, offering to take Bayley on a tour of inspection in an ancient Ford, warranted to bump over anything.

Bayley's own account of that venturesome drive must be read in full, with his dramatic tale of the storm—the worst in living memory.

Anxiously he scanned the railway as they rattled along the motor road ; and relief flowed through him. Mile after mile intact, except for occasional damage to embankments, where gangs of Pathans were already vigorously at work. Three years ago the line had been ' forbidden ' with oaths and threats. Now they actually talked of ' our railway ' and took a personal pride in its progress against all odds.

Near Ali Masjid, alone in the echoing gorge, signs of destruction increased : prostrate poles, tangled wires, a moraine of boulders blocking the road, while the railway ran secure along a ledge of solid limestone, above the torrent that had carried away a whole section of the road.

And what of the first bridge over that torrent ? Bayley's anxiety was acute, but brief. There it stood sturdily—abutments and piers in perfect alignment, though earth-works and training works and a hundred yards of embankment were gone. Every other bridge was standing ; and in the gorge itself all was well. For Hearn had wisely decided to tunnel the train at a high level ; so the invisible railway burrowed safely under a multitude of raging torrents, defying the great storm at its worst. Here, as elsewhere, Hearn's methods were vindicated up to the hilt.

On the return drive, caught in the fury of a lesser storm, they had to force the car through a mighty flood at imminent risk of their lives. A terrific downrush of water and crashing boulders held them prisoners on a ledge above the turmoil ; drenched to the skin, yet, in spite of all, impressed by the grandeur of the scene. Every rock-crevice spouted a waterfall ; and the artillery roll of thunder seemed to vie with the crashing torrent below.

Bedraggled and sodden, they at last reached Landi Kōtal, where high adventure ended in the comforting anticlimax of hot baths and steaming cups of tea.

Better than all was the profound sense of relief. 'Nature had done her worst. The railway had been buffeted, banged and bumped . . . and had not come out of it so badly.'

Bayley's last thought before he fell asleep was characteristic enough: 'The attack in force has come—and we have resisted it. To-morrow the work goes on.'

Throughout five years of unceasing toil those words were his slogan, till the work became almost an obsession as more and more of the line was placed under his control. By 1924 he was in charge of all works; a heavy responsibility that, like every burden, carried its compensation.

'I know of no finer joy,' he writes, 'than that of designing and building some great work. An engineer then becomes a creator. He passes through the same alternations of hope and fear, despair and exaltation as the creative artist, with the added agonising experience of the testing of his bridge or his dam. Those who cross a bridge on a fast train probably never spare a thought for the engineer who once stood and watched the first train rumble slowly over it.'

This particular engineer—endowed with zest and talent and staying power—had every reason for pride in his almost completed line; but inevitably the last year intensified the strain on his nerves and health. He himself confesses, 'Perhaps I was growing a little haggard and hollow-eyed. Sleep did not seem to be so refreshing; and little things which would formerly have made me laugh now assumed a menacing aspect.'

Friends, who knew the strain of the Frontier, told him he *must* go on long leave; but he could not tear himself away from the exacting demand on his hand and brain. Every yard of advance brought fresh problems, fresh dangers, above all, in the desperate business of building Hearn's spiral tunnels—a perilous and unpleasant job for all concerned. The courage of the Pathan staff was beyond compare; their disregard of danger positively alarming, especially

in the matter of explosives. A fuse of any desired length would be cut from a coil, placed in the detonator and nipped with pincers to grip the fuse. Bayley himself saw a man, who had mislaid his pincers, put the detonator between his teeth and bite it. On being told that, if it had exploded, his head would have been blown off, he burst out laughing. The joke was that it didn't explode; and anyhow a man could only die once.

Warned of danger underground from treacherous strata, they pooh-poohed it; laughed at the threat of Tirah Afridis to invade the Khyber and smash up everything.

'Let them come! They will find their match. *We* are not going to have *our* railway stopped.'

So completely, by now, was it their railway that could carry them to and fro at will. The thought of paying fares never entered their heads. With their bodily strength and nerves of steel, they scouted the idea of peril in any form; but, for Bayley—shaken by a strain he would not yet admit—the haunting sense of ever-present peril was too actual to seem a freak of fancy.

'Danger from flood above ground, danger underground, danger and hostility everywhere. Yet I loved it all, and could not leave it. The cruel fascination of the Frontier had caught me. No money would have tempted me to go. A fierce determination to defy all opposing forces drove me on.'

Year after year he had 'stuck it' without any real holiday, against the advice of more experienced men. He was now the oldest white dweller in Landi Kōtal. Another year would do it. A year...? Increasing and alarming weariness filled his mind with forebodings; yet a pause at this crucial stage was out of the question. Soon a date must be named when all would be ready for the pomp and circumstance of a viceregal opening ceremony; and working to a given date would add a new terror to life.

At last the great moment arrived for laying down the actual railway lines at the rate of a quarter of a mile each day; each advance marked off on a large-scale map, as a schoolboy marks off days to the end of term.

Long ago he had promised his wife that she—who had suffered her share of human privation and anxiety—should drive the first train into Landi Kōtal ; and so, after careful planning, it came to pass.

On a memorable day she and the small daughter—now ten years old—climbed with him into the cab of his leaky old engine, Puffing Billy. ‘The battered train jerked forward. Only a lot of old trucks and a brake-van pushed by a wheezing veteran, but it was a *train*—and the first train in ! Fog signals exploded beneath our wheels. The tribesmen let off crackers and bombs and ran alongside cheering and shouting, “Whistle again, Lady Sahib.” And the grimy train clattered, whistling madly, into Landi Kōtal station.’

For Bayley that was the Great Moment. After it, things seemed to fall flat, though the more terrifying Great Moment, in early November, still loomed ahead. And now the train carried not only materials but an increasing crowd of tribesmen ; armed ruffians jumping on and off it genuinely indignant at the absurdity of trying to prevent them from using their own railway. The post of ticket collector on the Khyber line was clearly going to be no sinecure.

By way of a final test, Bayley arranged that the viceregal train of long bogie carriages should be sent forward to Jamrud for a trial trip. He would take no chances of failure on the critical day. Many railway officials came with it for a joy ride ; and there was he, at the height of triumph, feeling like a bear with a sore head.

As he sat in the dining-car stirring a cup of coffee, something seemed to snap inside him.

‘This was the end. No more joyous days with the tribesmen striding over the hills in the teeth of the roaring Khyber wind.’ His line had taken the test. It could be opened any day now : a guarantee of success that seemed to leave him oddly unmoved. There was but one month to wait for the Great Occasion.

Suddenly, to his overwrought brain, a month seemed an impossible time.

And so it proved. For the man who had built so much of himself into the Khyber railway, that strange moment in

the dining-car *was* the end. He never went up the Pass again.

He had driven a willing horse too far, and the last lap had finished him. In his utter weariness he gave hardly a thought to his railway—his no more. The work was done. Only the artist knows the height and the depth of those four words. Nothing else mattered much now. Only one longing consumed him, for the green fields of England and a soft wind blowing up from the south-west.

His wife and child came down from the hills. He was ordered home at once; and they all three left Peshawar nearly a month before the Great Day.

So Victor Bayley had no part in the ceremonial opening of the railway 'that would stir men's imaginations far beyond British India.' Not for him the flags and the speeches and the high commendation, in which his name was justly linked with that of Colonel Gordon Hearn. For if Hearn's genius had defied the word impossible, Bayley's courage and gift of human understanding had changed the tribes' 'forbidden' into 'Build the railway, Sahib, and we will loot the trains!'

For five years he had borne the strain of the Khyber climate, of work without end and threats of ever-present danger. He had held out till his immense task was completed—the only thing that mattered after all. Ten years hence the ceremony would be forgotten, but the railway would be there.

Of that ceremony it is recorded that 'the guests left for Landi Kōtal in special trains, the line rising by loops and spirals over high ridges through thirty-seven tunnels and several gorges. The journey created unbounded admiration in the minds of all at the manner in which the many difficulties had been surmounted'; and Bayley himself, in a later book,¹ describes a railway journey through the Khyber as a heartening and impressive experience, revealing the mark left on those terrific hills by a few undefeatable engineers.

Yet it is a peculiarity of this 'spectacular achievement' that the line as a whole is so inconspicuous. Driving through

¹ *Is India Impregnable?* (Hale).

the Pass and ravines one hardly notices it, playing hide-and-seek among ridges and often vanishing altogether: so faultless was Hearn's eye for tunnelling—the most difficult and dangerous phase of the whole undertaking.

The fact that a mere twenty-seven miles of railway had needed those thirty-seven tunnels and ninety-two bridges, that it had taken five years of intensive work to build, is comment sufficient on an acknowledged masterpiece of its kind: a record in India, if not in the world.

THE KHYBER: AS IT IS—1927-1942

*'They do not preach that their God will rouse them
 A little before the nuts work loose.
 They do not teach that His pity allows them
 To leave their work when they damn well choose.
 As in the thronged and lighed ways,
 So in the dark and the desert they stand,
 Wary and watchful all their days,
 That their brethren's days may be long in the land.'*
 —RUDYARD KIPLING.

ONCE again we must picture the Khyber nearly twenty years on: changed in detail, unchanged in its savage aspect since the days when Bayley, for the first time, bored and blasted its inviolate hillsides almost with a sense of desecration.

Now, along that ancient highway, may be seen all the latest devices of modern defence work: concrete 'Dragon's teeth,' flame-traps and gun chambers hewn out of the cliffs; roads blocked at many points by thick belts of tank obstacles, covered by sharp cross-fire from bomb-proof emplacements concealed so skilfully in the cliffs, on either side, that nothing can be seen. Yet close to these innovations may still be found the more primitive defence works installed by Moghuls or Sikhs, and later on by British forces in the Second Afghan War. All over the harsh landscape a story of achievement is told in stone.

The whole Pass, where—in Warburton's time—never a soldier or sepoy was stationed—has become a hive of British and Indian troops, peaceful enough in their day-to-day routine, yet ever on the alert; trained to turn out ready for action at ten to twenty minutes' notice.

In distant England it is hardly realised that, for two years at a stretch, officers and men of the Khyber Brigade—six battalions, British and Indian—live practically under

active service conditions, keeping watch and ward along the whole twenty-six miles of the Pass. Some are stationed in the larger strongholds—Jamrud, Shāgai, Landi Kōtal, Landi Khāna; others in forts, towers and blockhouses that protect all traffic along the two main roads, that now includes a flourishing motor-bus service between Kabul and Peshawar. And still, in strange contrast, the camel caravans pass to and fro twice a week: three or four thousand shaggy, short-legged Bactrians led by Ghilzai traders, who pitch their black-blanket tents by the roadway, many of them bound for Calcutta or farther south.

Here, also, in early autumn, one may encounter groups of fair-skinned Afridis, ignoring the changed *tempo* of travel, moving *en masse* with their herds and families—infants and hen-coops, full of protesting fowls, perched together on the backs of mules. Down from the hills of Tirah they make their yearly trek to winter grazing grounds between the foothills and Peshawar: a biblical picture centuries remote from the grim detail of modern defence.

Forts guard the flanks along the Pass; and about a quarter of them are permanently manned. The rest would promptly be garrisoned at threat of war. In smaller ones eight or ten men are isolated and relieved every week; while the larger detachments, under British officers, are changed every three months.

Square, double-storeyed blockhouses, that pepper the heights, can be entered only—in true mediæval style—by an iron ladder that is pulled up at night when the bugler sounds 'Retreat.' At that signal all gates are closed, all posts manned for night sentry duty: in summer, four hours on and eight hours off; in winter, four hours off and two hours on, either in trenches behind barbed wire, or on battle-mented roofs—rain, hail or snow—in the teeth of marrow-freezing blasts from the Hindu Kush. Yet troops, on the whole, like blockhouse duty, that takes them away from the Adjutant and Sergeant-Major, keeps them constantly alert, and gives them a taste of the real thing.

To men so minded there is inspiration in the Khyber itself: in its rugged hills, keen air, clear skies and the

stimulant of constant readiness for emergencies. Though these may seldom arise, none can ever feel sure of his personal safety ; nor can vigilance ever be relaxed.

At any given moment all garrisons must be ready for 'Alarm Teste,' night or day, whatever they may be at. Week in, week out, the whole Brigade is hardened and educated by training manœuvres, with an escort of Khassadars (tribal levies) attached to each party in case of local trouble. The levies themselves are always on good terms with the British soldier, who has proved himself invariably the best possible ambassador for peace. Here, too, he is thrown into closer comradeship with his Indian brothers-in-arms. He sees and appreciates the personal link between them and their British officers: a blend of reliance and loyal devotion that has become a tradition, not fully recognised outside the Service. Created and maintained by the best elements in both races, it may be said to rank high among the many fine imponderable British achievements in India.

If ever that British-officered army should cease to be, India would lose far more than a corner-stone of defence. She would lose a unique form of fellowship between East and West that could never be created again.

If devotion to duty is the mainspring of Army life, the comrade spirit is its human counterpart ; and nowhere does that spirit more potently prevail than in the Khyber service; or in Waziristan, across the Border: a service that, in spite of—or because of—its hardships and dangers, has always been extremely popular with keen young officers. Out on manœuvres in all weathers, including snow-storms, they scour the rugged hills, most of them three times the height of Ben Nevis. They spend whole days practising warfare in grand exhilarating country ; ranging far afield, often impinging on the borders of Tirah and Afghanistan. Life worth living, work worth doing ; work that makes demands on the whole man : such is the view of Khyber service, in all ranks, from the hard-driven Brigadier downwards.

Rightly they feel themselves to be 'on guard' for India, where millions of peaceful folk go their ways in safety,

hardly aware of unsleeping watch-dogs on the distant Border. Troops when 'off duty' depend mainly on each other: games, cards and 'sing-songs,' with here and there the doubtful diversion of a bad cinema. For officers there are visits from one Mess to another. There is tennis and poor golf and valiant attempts at polo on the stony *maidān*. Sport, the eternal attraction, is negligible; but better than all are their occasional week-ends in Peshawar—hunting and driving and a brief reunion of husbands and wives. For no women are allowed in the Khyber—except for the day, on holidays; no married quarters for troops; and the greatest care must be taken that none should even seem to be aware of the Pathan women—those 'black-gowned, veiled phantoms,' jealously guarded from all outside contacts, yet responsible for half the murders and blood-feuds in the land.

Every two years the garrison is relieved by fresh units from India: so that the Khyber and Waziristan outposts are never without their watch-dogs, who neither expect nor receive 'much thanks' for duty done.

Behind them, in the big cheerful stations 'down country,' their fellows carry on the daily round of work and sport and sociability, seldom giving a thought to those guardians of their safety, the officers and men of the Khyber Brigade: 'Vanguard of the Army in India.'

That stirring title was bestowed on them by a distinguished French officer, General Gouraud, when he visited the Khyber in 1929. A staunch friend and admirer of the British, he had fought beside them in Gallipoli, where he lost an arm and nearly lost a leg. Deeply interested in the defence problems of India, he was glad of a chance to see for himself the famous and formidable Pass.

'At school I always heard of the Khyber. Now I am going to see it!' he announced on arriving at Jamrud Fort. And see it he did, in soldierly fashion.

Outside every post he halted to inspect detachments, British and Indian, finding many among them who wore the star of 1914-15, and had fought in France. A magnificent man with his one empty coat-sleeve, a great presence and

an imposing auburn beard, he addressed all the troops with inspiring effect ; and everywhere left an impression that did not pass away.

Nor did he soon forget his own vivid impressions of the Khyber and its ever-alert Brigade. From Paris, where he was Governor, he sent a souvenir to their Headquarters Mess at Landi Kōtal : a beautiful little silver statue of a *poilu* bomber. So the Khyber counts in its permanent garrison a fragment of Fighting France.

Though recent events have increased the military importance of the Pass, the Civil Power remains vested in the Political Officer, with whom the Brigadier must work in close accord. It is he who must cope with plots, intrigues and backstairs influence ; though the motor-car has regretably reduced the earlier element of personal contact, with its opportunities for leisurely, informal talk, essential to goodwill and good understanding, more especially on the Border.

The modern Political Officer, living in Peshawar, dashes out to the Khyber after breakfast—a forty-minutes' run ; works off his daily interviews and business in a few hours, and dashes back to Peshawar in time for lunch, followed by the increasing burden of desk work, that hinders contact still more fatally than the motor-car. Even in the 'sixties, Frontier officers were already complaining of too much office work and its ill effects on their relation with local tribes. What would be their strictures now on the plague of telephones, reports, gazetteers and intervening babus of the present day ?

As to the British officers actually stationed in the Pass, they are friendly enough with the tribesmen, but are not thrown with the Maliks in their round of work as are the Politicals and engineers. There may be rifle-shooting and an occasional tea-party in the house of some hospitable Chief : an awe-inspiring ceremony in a high windowless room, or open courtyard according to season.

The guests, seated on *charpoys*, are regaled with large cups of tea, lumps of congealed sugar, and dangerous, unboiled

milk. To these are added mixed biscuits, curly Indian sweets or cakes and the inevitable hard-boiled eggs, shelled by unwashed hands that leave tell-tale smudges on the white interior : a polite attention that cannot be evaded without damage to courtesy.

The formal talk is limited by lack of interests or of background in common. The men may have brains and character, but they are hampered socially by many factors : not least the complete absence of the woman element. More than almost any other Eastern race, the Pathan jealously guards his women. They may not even be asked after, nor visited by wives of British officials, as are all the high-born purdah ladies of India. Until that rule is relaxed, it remains a very real hindrance to friendly intercourse—the main crux of the Frontier problem.

Outside the sociabilities, there is nothing like sport for drawing men together ; but in the Khyber, as I have said, there is not very much wild life to shoot ; and the Afridi, on the whole, is apt to take more active interest in human quarry. Not that he is by any means the chronic murderer pictured in lurid tales of Border life. We have proof to the contrary from men like Warburton and Bayley ; also, more recently, from Brigadier Milward,¹ who commanded the Khyber from 1927 to 1930. Compared with men of other tribes, he found the Afridi often 'a most charming and courteous gentleman ; the Orakzai still more of a gentleman.'

When a Mahsud, in Waziristan, murdered his Commandant, as he sat at Mess, and the Political Officer as he slept on his flat roof in hot weather, it was the Afridis and Orakzais in the Corps who became personal escorts of their officers and guarded them at night. Only the blood-feud, peculiar to Khyber tribes, remains a blot upon a virile race endowed with many fine qualities.

'One cannot help,' writes the same officer, 'admiring their jealous love of freedom, their isolationist passion for the little villages tucked away in side valleys : just a few scattered houses and patches of tilled fields, excavated among rocks,

¹ Now Major-General Sir Clement Milward, K.C.I.E., C.B., C.B.E., D.S.O.

near the stream that is their sole water supply.' Yet, for all their suspicion of the ever-encroaching Sahib, they are shrewd enough to appreciate the fact that these intruders have treated them fairly and put much money into their lean pouches. To profitable railway contracts were added large subsidies for keeping things peaceful while the work went forward. Many, in fact, became so wealthy that other tribes, half envious, dubbed them *bunnias*, no longer worthy to be called heroes. The railway also had its uses; and later still the vast sums of money spent on modern defence works have gone far to pacify a people whose problem is mainly economic. For their barren hills—once covered with great forests—now produce nothing whatever, not even timber, iron or oil.

'What's the *good* of it?' asked Lord Melchett, looking out over the troubled sea of mountains around Waziristan.

Such an one would find no answer in the statement that it forms a natural defensive barrier for India, provides the finest training-ground in the country—and it breeds *men*. How far the race may deteriorate under the insidious effect of greater prosperity another generation will reveal.

The tribes, as a whole, are not disturbed by the presence of soldiers that implies neither actual nor prospective annexation. Only the roads and guardian forts belong to the British. The hills belong indisputably to the men of the Free Land; and on the strength of that certainty they accept the invasion of their sacred Pass. Attractive small boys, from Afridi and Shinwari villages, readily fraternise with that friendliest of mortals the British soldier, who takes the Pathans as he finds them. Only at times, in the matter of blood-feuds, resentment will flare up when the brutal nature of this strange and terrible custom, revealed at close quarters, revolts the sporting instinct of the West.

Thus, a party of the Royal Sussex, on duty in a block-house overlooking certain Shinwari villages, became enraged at the sight of an unsuspecting man in his own field being stalked and surreptitiously shot in cold blood. Such was their anger and disgust that they could barely be

prevented from going out in force and wrecking the whole village.

At another time, when the victim was a mere boy of ten, the Maliks themselves, backed by the Political Officer, decreed that so dastardly an outrage could not be condoned. By way of deterrent, it was decided that the murderer's fortified tower be demolished, to the great wrath of the man who had simply obeyed his tribal law—a life for a life.

Others took sides for and against the decree. A battle ensued between three villages, not more than a hundred yards apart: shots flying across the Road, in defiance of Government decree; each partisan, prisoned in his tower, sniping whenever a possible victim came into view; a battle that impeded traffic more or less for several days on end.

The murderer, meantime, under cover of a mud wall, was gradually restoring his damaged tower; and when hostilities ended with his property restored, he became his own man again.

What the moral effect may have been on men in bond to age-old custom, remains an open question.

The Pathan becomes inured to carrying his life in his hands; though at times he must devise odd shifts to evade lurking foes. A fine old Subadar, in General Milward's regiment, always had to set out on his leave several days before it fell due, or he would never have reached his home alive. He and his equally fine brother were the last two, still living, from a family of seventeen wiped out by a tribal feud; and while obedience to that ugly decree remains a point of honour, no sane argument against it can prevail. Education alone can eradicate—in time—their grim outlook on life and death and the ruthless decree of fate. Meantime, the tribes give India some of her finest fighting material, and their hills provide a formidable buffer state between her and Central Asia.

As for the local effect of the once forbidden railway, opinions appear to differ.

Colonel Sandes, R.E., wrote in 1933, 'The railway has

had a wonderful effect in civilising the Khyber region and encouraging friendliness with neighbouring tribes.'

More experienced officers, however, do not consider that the line has had any pacifying effect ; nor was it so intended. It was built as a strategic railway, and has its peace-time uses in the regular trade carried on between Kabul and Peshawar. Officers and visitors prefer to travel by car along the excellent motor road ; and the train is not now much patronised even by local tribesmen.

Those who do use it seldom take a ticket. They stroll on to the platform with their long hillman's stride, rifle slung across their shoulders ; and they board the train as it comes in, under the noses of the Hindu stationmaster and guard, both far too terrified to protest. When the train slows down, the agile Pathans drop off as it nears their station. The tribes in general live too far apart to mix or quarrel much. In the Army they live peaceably together ; and blood-feuds are 'off.' Taken all round, the Road—with its increasing motor-bus traffic—seems to be the main civilising influence. The railway, puffing once a day up the Pass and back, carries chiefly material, supplies and reliefs for the many troops now stationed there.

Too many troops ?

Again opinions differ. It is a question that involves the whole policy of Frontier defence, past and present. Since the time of Warren Hastings, 'the North safeguarded' has been an obsession of the military mind ; and behind those two astounding lines, through the Khyber and Bolān, there runs a system of lateral railways built at the end of last century for defence purposes only, showing a yearly loss rather than gain. Yet until 1941 those unprofitable lines were reckoned the most valuable in the land, safeguarding it against any invader. No stretch of imagination could foresee the irony of that immense expenditure on the northern passes, with little thought given to the south-east, and an unexpected enemy knocking at the back door ; the kind of irony that—for reasons beyond our ken—runs all through history.

In spite of many military warnings, the tardy fortification

of Hong Kong and Singapore was actually suspended by a Labour Government in 1932 : a false economy all too common when those in power refuse to envisage war. Certainly few could then have credited the fatal surrender of Indo-China to Japan that opened the said back door into Malaya and Burma, where, in 1942, the eagles were gathering.

Again that streak of irony appears in the curious fact that modern Peshawar, with regular troops massed in the North, must live behind a thick hedge of barbed wire ; its many gates guarded all day and closed all night ; while old Peshawar, in unsettled and dangerous times, was an open station, ' taking its chances in the fine reckless spirit that made the Empire.' Yet life and limb were probably safer in open Peshawar, relying mainly on its mobile, irregular Wardens of the Marches.

The major reason for these ironically changed conditions may be summed up in one word—politics, and tribal disturbances caused thereby : a tale too long and too complex to be told here. It has been ably dealt with by Sir William Barton,¹ who attributes the success of the Border ' Red Shirt ' movement largely to the Liberal policy of *laissez faire*, inevitably misunderstood by Eastern peoples. It is not surprising that the independent, self-reliant Pathan, a democrat in his Moslem fashion, should have ascribed it instinctively to paralysis. A conviction that British rule was losing grip certainly went far to increase the following and prestige of the fanatical Red Shirt agitator, Abdul Gaffur Khan, who aimed at raising the whole Border against the British Raj—and very nearly did so, thanks to the latitude allowed him by Simla Politicals and a Labour Government. ' Never, in all history, has sedition been given such complete freedom to paralyse authority ' ;² and Pathans, who are nothing if not realists, naturally failed to see why a strong Government should deliberately handicap itself by a kid-glove policy if it genuinely desired peace. For too long the British trumpet had been sounding an uncertain

¹ *The North-West Frontier*, by Sir William Barton, K.C.I. and C.D.O.

² Sir William Barton, *op cit.*

note ; and no ear is quicker than the Pathan's to detect the change with its probable implications.

In 1929 a Viceroy pledged to appeasement, and Gandhi to 'civil disobedience,' soon converted implications into actuality ; and the first Congress decree to that effect produced unexpected results on the Border.

For two years Abdul Gaffur Khan had devoted himself to founding a religious body christened, mildly enough, 'the Servants of God.' By British authorities this had been regarded, rightly or wrongly, as a harmless form of local activity. Frequent warnings from the Frontier Police as to its political significance had gone unheeded, in spite of the fact that Abdul Gaffur Khan, *Moslem*, had allied himself to Congress—a business-political body mainly dominated by Hindus.

By 1929 he had twice been imprisoned for sedition. His Red Shirts had taken to wearing a rough kind of uniform, and had established their headquarters at Charsadda, some twenty miles from Peshawar.

Early in 1930 Congress agents appeared in the city and proceeded to excite the most inflammable human material in all India. Pathans came flocking in from local and trans-Border villages ; and very soon the city was in a dangerous state of ferment. Repercussions along two hundred and twenty miles of Border affected most of the tribes except a few under strong rulers, north-east of Peshawar. Columns were out in the Kurram Valley. R.A.F. bombs were discouraging Mohmands ; and the Orakzais were spoiling for a fight. Everywhere Red Shirts—though 'non-violent'—were frankly hostile ; drilling and marching with flags and banners, shouting their slogan, 'Long live Revolution !' without let or hindrance from a Civil Power either reluctant or not strong enough to cope with a perilous situation : how perilous few realised till all was over—if then.

Without orders from the Civil Power, neither troops nor police could take effective action ; and the need for such action became increasingly evident as the brief northern spring flamed into the furnace-heat of May and June. Yet

only a few months earlier the Chief Commissioner had assured a peaceful-minded Viceroy, on tour, that Red Shirts were a harmless religious sect and the Frontier had never been quieter.

If it seemed so, to those who fain would see it so, the quiet was that of a tiger about to spring.

Soldiers knew and the police knew how Congress money and intrigue were unsettling Waziristan, and how serious was the whole situation inside the British Border, with armed tribes to the number of some 500,000 ready, on provocation, to make common cause against a Power once deemed invincible; now, to all appearance, on the downgrade.

In Charsadda and Pabbi, Red Shirt *personnel* controlled the traffic and the local situation. Police, having ceased to function, had vanished from the scene. A large Congress flag and notice implied that the British, in effect, had ceased to rule; yet irate Commanding Officers in the District could make no move. The non-violence boot seemed to be on the other leg.

Shades of John Lawrence, Nicholson and Edwardes might well have risen up in protest against such deplorable doings—or non-doings—in a land where they had transformed potential enemies into staunch friends by strong and courageous handling of the North in 1857. To their sturdy faith in the twofold destiny of Britain and India all things were possible; but a pallid policy of 'non-intervention' commanded neither respect nor allegiance from the hard-bitten Pathan.

Under the ægis of a Labour Government the Viceroy must contrive to make terms with the shrewdest Hindu Saint on earth; and what followed was obviously in the nature of cause and effect.

When at last the Civil Power recognised, perforce, the explosive state of affairs, its belated action had the effect of a match dropped into a barrel of gunpowder. The arrest of Abdul Gaffur Khan at Charsadda, of Congress leaders in Peshawar, and the closing down of their headquarters, set the gunpowder alight all round.

In the District, wires were cut—telegraph and telephone—railways damaged, roads blocked by felled trees, all communications dislocated. In the city, with its mixed population, an alarming riot flared up; the streets were thronged with fanatical Pathans, Afridis from Tirah, Afghans and Central Asians—a fearsome combination, mainly armed. The police, loth to act against fellow Moslems, completely lost control of affairs; and a military mobile column was sent into the city to take over charge.

They found the gateway blocked by a crowd of excited and turbulent Pathans; Civil and police officers inside the gate-house, powerless to cope with them. It was a clear case for the soldier; but initial mistakes at the entrance had the dire effect of letting the Indian infantry become involved with the crowd, handicapped by orders not to fire. Only the bayonet would serve; and that must not be used either, which put the soldiers at a positive disadvantage. Yet, in spite of a bad start, the tumult gradually subsided; certain posts were occupied by troops; and it seemed that the worst was over. By no means. The worst was yet to come.

A group of City Fathers approached the Chief Commissioner of Peshawar with the plausible assurance that they would hold themselves responsible for the peaceful control of the city, if only the soldiers were withdrawn. It was an awkward request at an awkward moment, with conciliation the order of the day, and small sign of response to it in the Frontier Province that respects the iron hand and suspects the velvet glove.

In this case, Authority proffered the velvet glove. The City Fathers returned to Peshawar, masters of the situation, their dark thoughts unrevealed. In spite of strong protests from the General Officer Commanding, all troops were then withdrawn, leaving the capital city of the Border virtually under Congress dominion; their flag proudly floating above it; the Union Jack suppressed; while Peshawar Fort, that commands the city, was still held, as usual, by troops who could make no move.

To Indian soldiers, knowing their own people, a position

so anomalous seemed simply one more proof, among many, that the English were mad.

A Gurkha Subadar spoke his mind on the subject to a British Commanding Officer.

'We can't understand you Sahibs. Here you are with six-inch howitzers and other artillery. Why do you not shell the city into submission?'

And the soldier might well have said, 'Ask that question in Delhi.'

The Border, with its entire population of fighting tribes, is eminently a soldier Province, created by the great soldier-politicals of the Lawrence era; and, through good days and bad, the bond holds firm between British officers of the Indian Army and their men. It is worth recording that, in all those months of unrest, of Congress intrigue and open hostility, not a single Indian soldier—Sikh, Dogra, Pathan or Punjabi Mohammedan—showed a sign of wavering or hostility to Government, with the sole exception of one high-caste Hindu regiment, susceptible to Congress influence. Yet at least one-third of the men must have gone home on leave, to villages where loyalty would be assailed by taunts and pleas, or even acts of violence. Their steadfastness throughout was a shining light at a time of lowering cloud and threat of open warfare along the whole Border, largely owing to the invidious position thrust upon military commanders, who could take no decisive action, yet were liable to be blamed if serious trouble should arise.

By the end of May, Red Shirt activities had been successfully checked; more Congress leaders arrested and their headquarters closed down. Soldiers were again stationed in the city: a timely move in view of impending events.

In the blazing heat of early June, R.A.F. pilots reported a *lashkar* of Tirah Afridis, two or three thousand strong, crossing the Border and approaching Peshawar. Under cover of darkness they came close up on three sides of the cantonment, devoting special attention to the aerodrome, their enemy in chief, since the R.A.F. could attack them in regions where no troops could operate.

Next day a column went out against them, with guns and cavalry : a distracting game of hide-and-seek among villages, orchards and nullahs. But the guns did good service ; and during the second night those unwelcome intruders vanished, for a time, leaving city and cantonment very much on the alert.

June passed. July passed. It began to look as if the bold adventure had been called off ; but Congress money and machinations were ceaselessly at work behind the scenes ; and in August, during a spell of intense heat, back the Afridis came again—and the real thing began.

It was the time of tall, standing crops in the heavily irrigated Valley of Peshawar, the maize more than eight feet high ; and the Afridi is an adept at using any form of cover. Between the valley and their own foothills lies the great stony waste of the Kajuri Plain gashed with nullahs. Through these the Afridis crept in hundreds, till they reached the fields of standing maize that covered their stealthy advance to the dense orchards outside Peshawar city. Thence they sallied out by night and fired erratic shots into the barb-wired cantonment, doing little harm beyond damage to British prestige : an asset of peculiar value on the Border.

By day the snipers vanished, as only Pathans can vanish, among the crops and the water-channels, dug so deep and wide that guns could not cross them, neither could cavalry chase the unseizable invaders or bring them to battle.

The whole affair was a case of skilful infiltration, so that they practically infested the District, hiding in gardens, orchards, crops ; everywhere helped by the villagers, who fed them and lent them clothes ; hid them and their rifles in underground chambers, and could not be restrained except by the proclamation of martial law—a less simple matter than it sounds. For those in command, civilian and soldier, the whole situation bristled with difficulties : two hundred miles of Border in a state of active unrest ; Red Shirts openly defiant, their meetings and parades unchecked ; Peshawar city seething with sedition, requiring a permanent garrison to prevent an explosion. And outside, on the plain, Afridis, elusive as jackals, evading challenge or pursuit.

Day after day columns of all arms went out under a flaming August sun to operate against an enemy who would do everything on earth except come out and fight. On one occasion a large body of them broke into the city, where they burnt a supply depot near the railway station, only to be repulsed by infantry with heavy loss.

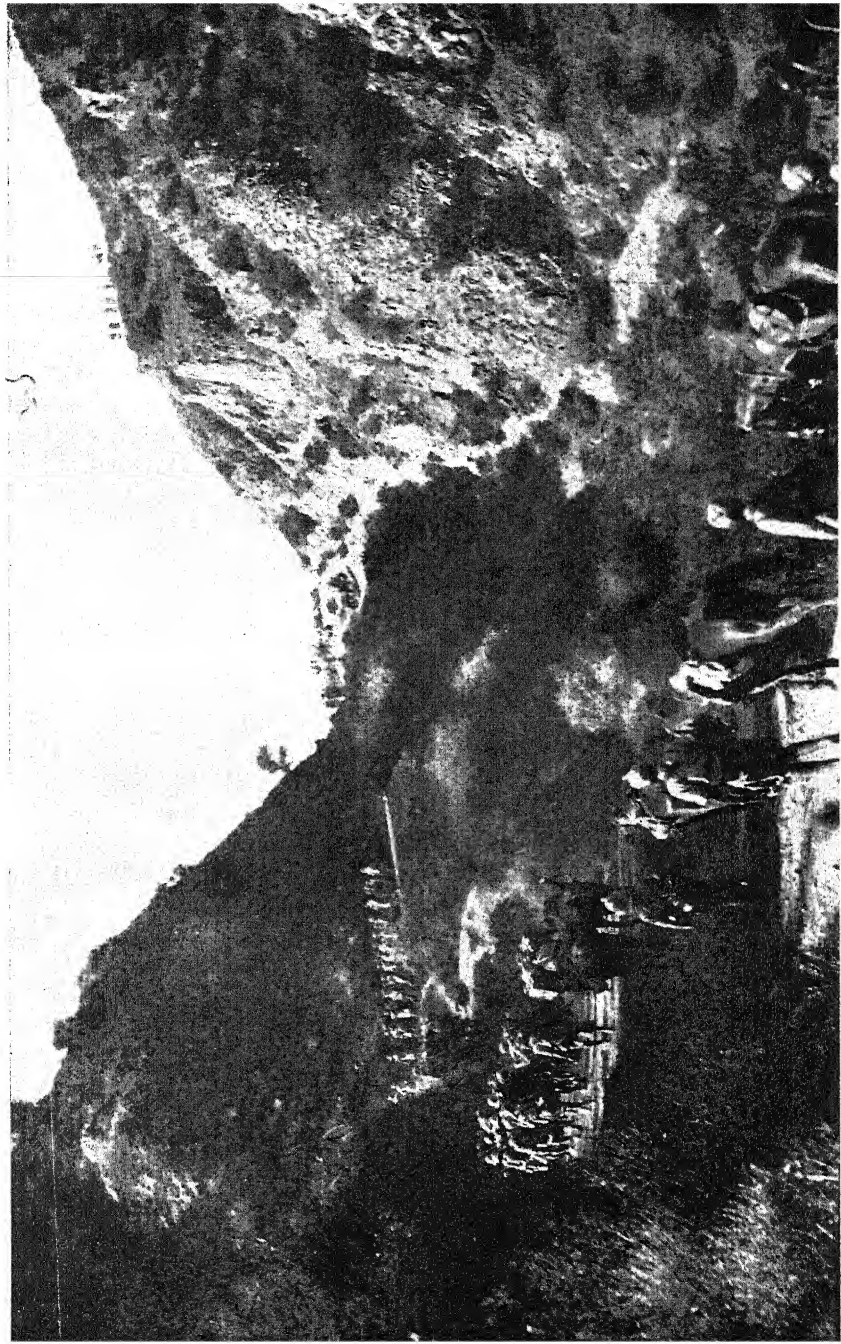
Still, for a little longer, the game of hide-and-seek went on ; but Pathans are raiders rather than invaders ; and on this occasion they soon discovered that the British Raj, if non-aggressive, was by no means extinct. After ten days of harassing operations, with heavy losses, their brief incursion ignominiously petered out ; and the troops returned to their normal round of life, none the worse for their taste of active service under most trying conditions.

A characteristic and significant touch tells how, during the 'invasion,' wounded Afridis came confidently trickling into mission hospitals for treatment ; and when any of them were asked why they had been foolish enough to invade Peshawar, all gave the same reply : 'We heard that the British were handing over their rule to Congress Red Shirts. Therefore we came along quickly, not to be too late for getting our share.'

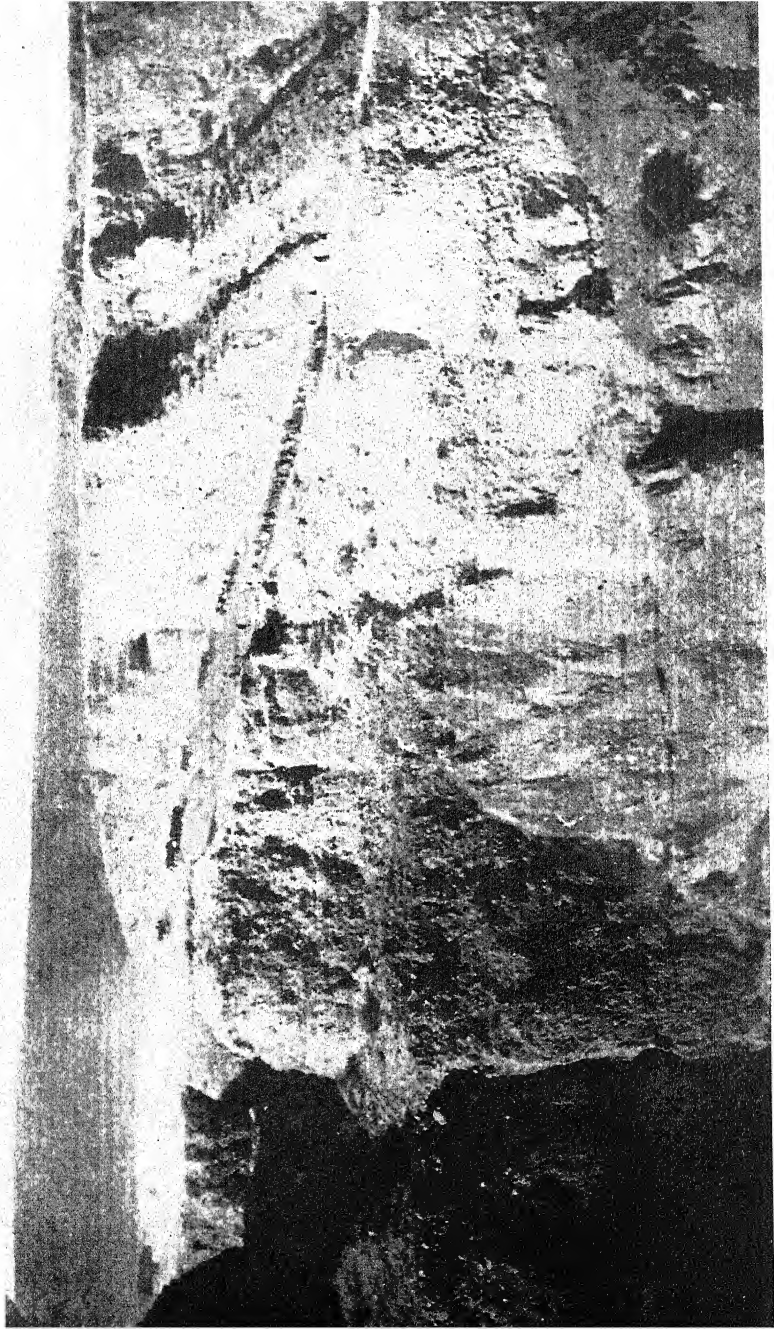
Such was the fruit of an over-Liberal British policy ; and it is worth noting that the same kind of talk has again become prevalent in more recent years.

For the would-be invaders there was more to follow. Honour must be satisfied and prestige restored. It must be made clear that the writ of Congress did not run on the Border ; that even the mildest mannered British Government could not be flouted with impunity. To that end, it was decided that a small force should occupy the two plains, north and south of the Bara River, used by Tirah Afridis for winter quarters and grazing grounds, when snow drove them down from their high valleys. Once these were occupied, the Afridis would lose not only their caves, but the lucrative trade they carried on across the Border : a hard decree, yet it was the kind of punishment they could best understand.

In October the troops moved out on to those barren plains



Part of a column on the march approaching the summit of Kandao Pass.



Difficult country in the region of the North-West Frontier, where a British-Indian Force was attacked by Afridis while returning from a reconnaissance in the hills.

—Kajuri and Aka Khel—where they must set up their own quarters, make their own roads and be ready, at all times, to counter sporadic attacks more congenial to the Afridi than open fights. With the divisional troops went the fine brigades from Nowshera and Peshawar which had done splendidly throughout hot weather operations under Major-General Coleridge.¹

October brought cooler nights with an occasional nip in the early morning: a foretaste of the brilliant, keen, inimicable winter of Northern India. It also brought lengthy conferences between the Political Officer and Afridi elders as to whether they would peacefully hand over those two plains to Government by way of safeguarding against further 'invasions.'

The outcome was flat refusal. In symbolic Eastern fashion they declared, 'The Tirah is our father; Kajuri Plain our mother; Karawai Hill our son; Besai Ridge our daughter.' So that which would not be yielded on demand, must perforce be taken over and become a part of British India.

The troops must build forts and posts at commanding points, bridges also and roads for motor transport; must, in fact, do an immense amount of spadework before the plains could be handed over to a permanent garrison of two battalions: a large programme; and a strenuous six months they had of it in that grand climate which kept them at concert pitch; all troops, British and Indian, working in happy accord; infantry lending a hand to the Sappers, repairing rain-damaged roads and making many new ones; building a line of posts with breastworks and tent-enclosures for permanent detachments.

Road-making all the time was of paramount importance, in view of that supreme civilising factor, the motor-bus; and while half the force toiled at it, the other half must occupy surrounding heights to protect their fellows from surprise attacks at which the Afridi excels. During December many roads were finished on both plains.

'Nobly did the troops work,' wrote their Commandant

¹ Now General Sir John Coleridge, G.C.B., C.M.G., D.S.O.

' Officers and men really got down to it ; . . . the main roads metalled, rolled and sanded. To collect the sand and the metalling—unbroken stones—was a tedious job ; all having to be brought by mule or lorry from places miles away. Breaking up the stones was worse than anything. But British and Indian worked together with a will ; and to see officers lately " escaped " from Headquarters getting down to it with their bare hands was a sight for the gods.' All enjoyed the keen satisfaction of doing ' a live man's job ' in arduous conditions that only made it seem the more worth while.

Each forward brigade must build and christen its own fort, each vieing with its fellows in speed and zest. The brisk work of the Nowshera units, with Christmas leave in view, is typical of the spirit that prevailed. Before the 19th of December they were due to build their permanent post that would keep watch over the Aka Khel Plain ; to leave it in a defensible state with stores and water supply for a small garrison.

Off they marched to their objective—a fine set of men, inured to climate and constant activity ; the 2nd Battalion of the Essex Regiment, after two years of Khyber service, at the top of their form, officers and men ; resolute all to achieve a record race against time.

So keenly and so hard they worked, the Brigadier himself lending a hand, that the post sprang up like magic. The walls and picquets were ' wired,' the garrison installed, tents pitched, reserve of water and rations put in—' and the men marched six miles back to camp, justly pleased with themselves.'

The fort was at first named Nowshera, after the brigade ; but later it was felt that this might cause confusion with Nowshera cantonment ; so the name was deservedly changed to Fort Milward, in honour of their Brigadier who had played a distinguished part in all operations since the Red Shirt troubles began.

In the New Year of 1931 they were all back again, in fine fettle, ready for further constructive tasks, enlivened by

'little scraps' with Afridis, who continued to put up a sporadic fight against the change they had brought upon themselves. Once too often they had presumed upon their own saying that 'the patience of the British is as long as a winter's night,' only to learn that 'the arm of the British is as long as a summer day.'

The last 'little scrap' came off with complete success on the 11th of March; and thereafter the two battalions were installed in three posts, with Fort Bara behind them, and five small posts to keep their line of communications.

When these were ready the Kajuri Force bade farewell to the plains where, for five months, it had lived under active service conditions. One brigade alone had marched some 850 miles, had built five permanent posts and laid down sixty-five miles of road that stood up well to the after-strain of motor traffic: a record that gives the measure of comparable work done by their fellows.

By way of diversion the Force had tackled Afridis in some forty small fights; and throughout the whole strenuous period, including operations round Peshawar, 'all ranks had shown a splendid spirit; had done everything required of them, and would have done more, if a less nebulous enemy had given them the chance of inflicting a decisive defeat.' As it was, they had driven several thousand Afridis, with severe loss, back into their hills; had prepared and fortified two large plains for permanent occupation: a move that, undeniably, had a good effect all round.

Yet, by some strange oversight, they were not even mentioned in the papers. They seemed to have been overlooked—but not altogether. For, in leisurely time, all units of the Force were awarded a bar to the Frontier Medal, for services that wrought a lasting effect on the peace of the Border.

And after all those manifold exertions, what followed?

News arrived from Delhi that completely disheartened men who had spent the whole hot weather of 1930 successfully extinguishing the Red Shirt movement.

In the distant capital a polite duel of words between

Lord Irwin and Gandhi had resulted in virtual victory for the Congress leader; had settled him more firmly in the saddle and removed the ban from Congress activities—nowhere more hostile and dangerous than on the Border. The untimely release of fourteen thousand political prisoners included that of Abdul Gaffur Khan; and the Red Shirts at once flared up again more aggressively than ever, since none could hinder them.

Soldiers and civilians alike could only look on in disgust at months of difficult work swiftly and defiantly undone.

Meantime, in England, the crisis of 1931 and the emergence of a National Government brought, among many political changes, a new Viceroy for India: a man who had much experience of the country and genuine sympathy with its people; in politics a realist of whom it was said by a harassed official that 'the idealist had left the realist a hard row to hoe!'

Backed by his Home Government, Lord Willingdon lost no time in reversing the whole position of affairs. Gandhi—the late-exalted—found himself once more in prison. Congress activities were proscribed; law and order restored to a people weary of civil disobedience and *hartals* that seemed to serve no purpose except to dislocate their trade and their lives.

Lord Willingdon also recognised and acted on the truth that, as the Punjab is the Sword Arm of India, so the Border is its Achilles heel. Though there is little or no racial antagonism, and much personal friendship between the best men on both sides, there is not yet enough all-round association, nor enough confidence in a resolute British policy. Neither railway building, nor occupation by troops, has ever been actively responsible for waves of tribal restlessness. Intermittent suspicion of weakening in British Imperial policy has been the main source of Border trouble, first, last and all the time.

It is quite conceivable that the advent of a strong Viceroy was almost as welcome to the tribes as to hampered Frontier officials, who at last received the desired mandate to take immediate action once more against the Red Shirts; to

arrest all their leaders, including the arch-enemy known as 'A. G. K.'; to Tommy Atkins, briefly, as 'The Gaffer.'

Christmas 1931 brought to officers and men the excitement and satisfaction of 'a great round-up'; a thousand leaders re-arrested and order restored—to the relief and satisfaction of the whole district.

Throughout that year of renewed ferment the Afridis had given no trouble whatever; nor have they done so since the two plains were taken over by the British: a move that successfully established all this part of the Frontier. The whole operation—as described—was admirably carried out by all ranks, under the command of General Coleridge, whose grasp of detail and capacity for leadership went far to ensure the successful completion of a valuable winter's work.

The troops, since established there, have proved themselves, as usual, ambassadors for peace. Good relations rapidly increased British influence with Afridi tribes, so that again many more of them enlisted in the Indian Army, to the advantage of all concerned.

The Kajuri forts, built in 1930, have since been enlarged into permanent barracks; and soldiers move freely about the plain, while the Afridis, as before, come flocking down in winter with their wives and families, their flocks and herds. Unhindered, they occupy countless caves among the rocks and narrow valleys. British officers and men go out alone with them after small game, far up into the hills where they have never been before. In the Khyber also peace prevails: a peace not in any way imperilled by passing declarations of independence.

In proof of it they have their own tribal arsenals: little mud-walled workrooms, where rifles and revolvers are made by hand in perfect imitation of their British models, even to minutest markings, though these will often be upside down. The steel alone remains vastly inferior. Therefore every Pathan still covets an English weapon; and sentinels, in lonely posts, must have their rifles chained to them: a precaution that has occasionally cost them their lives.

The old spirit of antagonism still crops up here and there ; as when a gathering of village headmen announced to a party of British officers, ' We come together to greet you, but we are all enemies.' Yet the speaker had two sons in the Army and a third going to Canada for air training. So compact of strange contradiction is human nature, East or West.

In the Second World War the tribes, as a whole, proved themselves loyal allies, resisting the lure of German bribes and falsehoods arrayed as truth. They are shrewd judges of character ; and a strong British policy will always command their allegiance.

A special correspondent, visiting the Khyber at the end of 1942, described its modern defence conditions as practically complete, though by that time the large Axis pincer movement, east and west, had been checked and the odds against an armoured force approaching the Khyber were overwhelming. The real danger lay elsewhere.

The irony of fate, already noted, could not fail to strike even the least percipient. But if overmuch money has been spent on an improbability, the dictum holds good that India's principal gateway into Asia must remain guarded against any eventuality ; and the visitor in question paid a well-deserved tribute to the human element behind the elaborate modern system of defence.

The deepest impression that remained with him was of ' the fine service, often tedious and lonely, that is being rendered by British officers, civil and military, and by their Indian colleagues. If the Indian Army still depends largely on its British officers, this is even truer of the irregular militia and police scattered among the hills ; and the reputation for impartial judgment earned by Political Officers arouses more confidence than could be otherwise commanded in present conditions.'

The Political Officer everywhere holds a position as responsible as any in the Empire ; and his way of life, on the Border or beyond it, is no primrose path. Yet at best, difficulties and all, his hard task may prove a rewarding one, especially if he adds to the gift of racial understanding

an alert sense of humour. According to General Coleridge—speaking as a mere soldier—‘Tough—not rough—humour and justice go further with the tribesmen than any high-falutin’ lawgiving.’

Soldier and civilian, though normally good friends, are not always in accord as regards the conduct of operations, politicals, as a whole, being apt to discourage ‘a show of troops,’ while the soldier still maintains with some justice that ‘the more we show them, the less trouble we shall have.’ The same officer adds, ‘Get in roads as far as possible. Always say what you are going to do. Then do no more—and no less.’ Reliance on British word and British policy is the supreme factor in dealing with the unique human medley of the Border country: an older generation of men, who might have stepped straight out of the Old Testament, and a new generation of young Khans fresh from Islamia College, a Moslem institution only six miles from Jamrud.

Founded in 1914 by Sir George Ross-Keppel and that distinguished Pathan nobleman Sir Abdul Quayyām, it stands on the very ground where Buddhists built their Home of Learning some two hundred years after Christ. Its playing-fields, halls and hostels cover two hundred and fifty acres of the stony plain; and although hardly a year passes without an interlude of Border raids and alarms, Islamia College has stood for nearly three decades unsinged by the flame of war. ‘The Khyber Afridis look on it as their College and hold it sacrosanct’ not without good cause. From those ancient ruins there has grown up a new centre of Islam’s culture that may yet bring unlooked-for things to pass. It may breed a closer understanding between the best men of both races and go far to justify England of her great adventure in the East. For English and Indian masters are working together, jointly, in the College to one great end. A triumph of imaginative courage and faith, needing neither barbed wire nor forts for protection, it flings ‘a challenge to the intellectual darkness that broods over the Border hills.’

The chequered story of the Khyber Pass and the whole Border Province is a mingled record of high achievement

and regrettable errors. On the whole it is a record creditable to both races ; and Sir William Barton is rightly convinced that ' Britain has not yet exhausted her mission on the Border. Fortunately for her and for India, the Frontier still attracts the best of her manhood.'

Rudyard Kipling, if he lived, could find material there for Plain Tales of quite another quality from those very different hills, where the individual British officer still counts for more than any abstract British Empire. Well that it should be so ; for it is the individual—from the birth of every religion downward—who has always been the world's creator or destroyer.

If the Khyber Pass is not yet wholly pacified, the failure lies rather with policy or method than with the men of either race. Even in this day of rail and car and Islamia College—justifying the vision of its founders—to enter that curious natural opening is still to feel oneself at the edge of big unknown possibilities, of a gateway into Asia that has seen much turbulent history—and may yet see more.

THE PERIYAR PROJECT: A DIVERSION ON THE GRAND SCALE

' They say to the mountains " Be ye removed."

They say to the lesser floods " Be dry."

Under their rods are the rocks reproved :

They are not afraid of that who is high.'

—KIPLING.

THIS is the strange tale of two rivers, both born in the great range that runs, like a backbone, down the whole length of Southern India from Bombay to Cape Comorin, dividing the Province of Madras from the independent Hindu State of Travancore. These two streams, the Vaigai¹ and the Periyar, play leading parts as chief passive characters in a story too incredible to be anything but true. The chief active parts were played by one Royal Engineer officer with his indefatigable staff; and, between them, they achieved 'one of the most extraordinary feats of engineering ever performed by man.'

The two streams themselves were as different in temperament as the two tracts of country separated by the Southern Ghāts. The Periyar, rising on the westward slope of the range, was a lively and at times a boisterous river, over-filled by a copious monsoon, flowing uselessly through impenetrable jungle and rushing downward, in a brief but devastating journey, across well-watered Travancore to the Arabian Sea.

On the far side of the range down the eastern slope wandered the Vaigai, a meagre stream, poorly fed by monsoon clouds that had already given their sum of more to that which had too much. Its waters, in the dry season, often dwindled to a trickle of precious moisture wandering ineffectively through the arid Madras district of Madura

¹ Pronounced Vayguy.

into the Bay of Bengal. The peasants, in their desperate need, used every drop of river water that could be diverted into small canals for their starved rice-fields, leaving little of it to reach the sea, and that only about once in ten years.

In one case abundant Nature over-supplied ; in the other case a desert tract, starved fields and starved human beings, vainly craving the water of life that ran to waste in Travancore. The contrast presented a nice problem for a humane Government : an intriguing puzzle for any talented engineer. Could the Periyar conceivably be induced or coerced into replenishing the less-favoured stream on the far side of that huge unexplored range ?

From very early times the problem and its practical urgency had possessed the minds of those who were concerned with India's welfare ; but not unnaturally it seemed beyond the power or ingenuity of man to cleave that mighty range and bid a turbulent river change its course.

Early in the nineteenth century an attempted survey of the whole region merely convinced both experts and Government that the adventurous plan was 'chimerical and unworthy of further regard.' Climatic conditions in the Periyar Valley were alone enough to discourage any ordinary mortal. Malaria and jungle fever made the whole region impossible from April to June, which reduced the working year to nine months. And Nature had other trump cards up her sleeve. July and August, November and December were rendered practically useless for river-bed operations by floods and continuous rains. Remained the meagre allowances of January, February and March for purposes of actual construction ; and unless the work done in that short time could be made complete and solid, it must infallibly be demolished by the floods of July. Add to the tale of these mild discouragements the difficulty of transporting food and every form of material into the depths of the jungle. Bulky and costly machinery, plant and all else, would have to be dragged by man or animal over unmade roads for more than a hundred miles from the nearest railway station ; crossing, in transit, four large unbridged rivers and upland slopes many hundred feet high. The camping site, to be cleared

in virgin forests of impenetrable undergrowth, would be seven miles from the nearest cart road and twenty from the nearest cultivation.

As for engineering problems and difficulties, they alone seemed to justify the discouraging verdict of Authority—'unworthy of further regard'; but an urge to attempt the supposed impossible seems rooted in human nature, more especially in men of Anglo-Saxon breed. So there remained a few enterprising individuals who, from time to time, did 'further regard' the dismissed scheme, even to suggesting a practical plan for the great diversion: a plan for raising the waters of the Periyar by means of a huge concrete or masonry dam built across a gorge, thus checking the river's downrush to the sea and impounding it in the form of a mountain lake.

Thence, by means of a deep cutting, the lake water could be made to flow towards a tunnel that must be bored through the summit of the ridge, thus giving the Periyar an outlet, down the eastern slope, to the thirsty plains of Madura.

That impressive proposal still looked unworkable except on paper. Moreover, the cost would be almost prohibitive. So, at intervals, the project was discussed and dropped for close on sixty years. Then once again it was pressed upon the attention of Authority. Hopes were raised. The importance of the scheme could not be denied; but unluckily its revival coincided with the periodic scourge of famine (1866-67), which of necessity usurped all funds and official attention available.

Once more the patient project bided its time for yet another six years; but long before that it had awakened the practical interest of a young Madras engineer whose intelligence was matched by his will to achieve.

Thus it ultimately befell, almost eighty years after the 'chimerical' decree, that the urgent need of water in the Madura district at last began to outweigh the official conviction of impossibility. If the thing *could* be done, emphatically it *should* be done. So, in 1883, Major Pennycuik, R.(M.)E., who had long been in touch with the scheme, was placed on special duty that he might prepare a revised survey

and estimate for further consideration. These he duly produced; and the result was sanctioned in 1884.

The marvel of ultimate achievement was, in some ways, hardly less than the marvel of any practical engineer being ready and eager to undertake an exploit bristling with obstacles of a kind that had probably never before been encountered and overcome: a challenge to human skill, fortitude and endurance. Even so, the root question of cost entailed further delays before his arduous preparations could be so much as begun.

These involved practical measures to catch and tame the wild waters of the Periyar—with a flood discharge equal to half that of Niagara—and thus create the mountain lake as planned. Already Pennycuick had discovered the only possible site for his gigantic dam that must be at least 178 feet high: a steep V-shaped gorge three thousand feet above sea-level. Through it the river flowed in varying degrees of speed and depth, according to the season; and its situation—in the heart of almost uninhabitable jungle—must be accepted along with a dozen other difficulties that might well have daunted a less resolute group of men than Major Pennycuick and his picked staff of young Cooper's Hill engineers. Distances from road and rail added further complications to the vagaries of a mountain river, the liveliest and most incalculable of all natural forces tamed by man.

The clearing of the jungle for a big coolie camp, officers' huts and workshops was in itself a nightmare experience, the climate accentuating their many trials. For in the Periyar Valley, as in many lovely tropical regions, the curse of jungle fever lurks behind a smiling face; and the hapless coolies went in terror of wild animals—not without reason. The voice of the tiger, prowling in darkness, 'thrilled their dusky marrows.' Elephants amused themselves by tearing down tents, houses and office huts with devastating thoroughness; and when the savage blue-eyed bison came charging into camp, all the workers would 'down tools' and flee for their lives. Coaxing them back again was in itself a task demanding all a white man's patience with the fear-stricken,

exasperating, yet often invaluable coolie people, while inwardly girding at the waste of precious hours and days.

For Pennycuick and his over-burdened staff, time was the supreme factor. Days lost at the end of one season could not be made up at the other end ; since even a Sahib could not command the clouds of heaven. For all that, he could—and did—go forward in the spirit of ‘ things that must be done can be done ’ ; and, in that spirit, the dense jungle space was cleared, the camp set up, a wire rope-way—to lift huge masses from the quarry—constructed and put in working order : preliminaries that took a full year to carry through.

Not until September 1888 were the works declared open by the Governor of Madras with the formal ceremony of a tree felled on the site where the great enclosing wall must by some means be built up.

Then was Pennycuick, the invincible, confronted with the stiffest of his many problems.

The foundations of the huge hollow ‘ coffer ’ dam—in which the masonry dam would be enclosed—must be laid well below the lowest water-level : work that was only possible at the driest time of year. Even then the river must be partially diverted *pro tem*.

Now the Periyar was, of all hill streams, the liveliest and most intractable. The spirit of the river, it seemed, had no idea of letting its waters be tamely converted into a canal, for the benefit of puny Madrassis, at the bidding of a white-faced engineer. He in his turn had certainly no idea of being defeated by any mountain river in creation. Though neither boastful nor aggressive, he firmly intended to conquer in the long-run, however long the run might be ; and conquer he did—at a price.

From June to November rain fell continuously four days out of five, keeping the water at highest level ; and in the few merciful months when rain did not act as a chronic damper, the river-bed was at the mercy of sudden incalculable floods that might demolish weeks of work in a few hours.

How the engineers eventually solved their problem and laid their foundations could only be told in terms too technical

for the general reader. Solve it they did, more or less ; but the river had its say in the slow, difficult process.

The story is told by one of those resolute engineers themselves : how the first earthen dams—to divert the water for building purposes—were washed away by an unseasonable flood ; how the main design must be altered, at short notice, to save the wreck of a whole season's work ; how, night and day, the half-completed embankments of the new scheme must be patrolled, so that any perforation caused by the river could promptly be repaired ; how at last—when the huge 'coffer' dam was almost complete and the necessary pumping begun—the heavens opened, as if a celestial tank had burst. Three inches of rain fell in four hours, causing a flood that breached the triumphant dam, burying pumps and pipes and ruined walls in one watery grave.

It was the kind of thing that happened not once only but many times over ; and not from floods alone. Wild elephants, with their instinctive dread of man the arch enemy, gave them no peace. They would destroy barrel on barrel of Portland cement, their special weakness, and pull up furlong stones embedded in concrete as a dentist pulls out teeth, for no earthly reason unless it were to discourage the intruders, who were resolved that neither elephants, nor malaria, nor the river should have the last word.

It was a case of, 'Do it again'—and they did it again and yet again, though the labour involved was herculean ; and there were too few officers or skilled subordinates to meet the incessant demands on them in a hundred ways.

Three working seasons had to be spent in the making of a lesser canal, with its locks and dams, tow-paths, embankments and jungle-clearing on both sides—the most tedious affair of all. And foundation work, though it progressed, was in constant danger of being submerged. For no human ingenuity could divert that river from its narrow gorge ; and unfinished work was at the mercy of every flood, when piers and props would be destroyed, only to be replaced with infinite trouble against the full force of the stream. Often the coolies were obliged to work at night, actually in the water at a low winter temperature. For repairs—all material

being miles away—anything on the spot must be used ; and what did not exist must be conjured out of the ground ! No end to the opportunities for invention and device that stimulated the faculties of clever, enterprising men and made incessant calls on their resource and energy ; but of delays and interruptions and the coolie problem there was no end. Only high wages could tempt Asiatics to work for months in each year on the fringe of any fever-infested jungle full of strange beasts ; and that unusual command of money tempted them to multiply excuses for frequent returns to village life, to feasts, festivals and general enjoyment, even as extra money tempted young miners in the World War. But coolies or none, Pennycuick's staff must needs push on with their great undertaking against time and against odds. There were estimates also—the nightmare of the engineer ; yet *coute qui coute*, the dam must be built ; also the terrific tunnel to release the raised water and divert the stream.

But the process took time. It demanded from all concerned a staunch refusal to admit defeat ; though the river and the jungle and the climate looked like defeating them many times over.

To begin with, in February 1889 the main foundations—laid with the utmost difficulty—were practically wiped out by floods, as I have told—a disaster of the first magnitude. And there on the bank stood John Pennycuick watching the utter destruction of his whole idea, the dire loss of material and working days. What passed in his mind can never be known. What happened later in the day has been told by the one man living who remembers that disastrous event.

By five o'clock the same evening Pennycuick handed to his head Assistant, Scott Taylor, a new foundation plan worked out in detail with the characteristic remark, ' This morning's flood was really rather a good thing than otherwise. This is a much better scheme.'

It was an episode in the true British tradition—'making of calamity a whetstone for courage': a test to which those few engineers were subjected not once but many times over.

In February 1892, when the river-bed had been made more workable and two lesser dams completed, one of them was topped by floods and the weir of a lock bodily carried away by uprooted trees dashing against it. In April the whole work—and everything with it—was submerged by a river rise of twenty feet in two hours. In July all that was left of works and weir went the same way, and a completed bridge was overturned. What such frequent rebuilding means, the loss of time, the strain on nerves and energy, only the experienced engineer knows ; and he very seldom talks about it. He knows that loss of material must somehow be replaced ; that a man who cares for his job must pay his own way, trusting to be recouped in Government's own good time.

But whatever else might go well, fever and sickness they had always with them. Virgin forest, strong sun and heavy rain, at no great height above the sea, combined to breed an active and stubborn form of malaria—most fatal of all hindrances to steady progress ; the coolies—ill-clothed, reckless and fatalistic—became slack through frequent bouts of sickness. Enfeebled by malaria, they grew more liable to rheumatism, dysentery and lung complaints, yet shied away from Western medicine or treatment ; and the British staff, in spite of stronger constitutions, were not immune.

Last, and worst of all, came cholera—the dread inevitable. Two serious epidemics were aggravated by coolies again refusing treatment, refusing even to notify themselves ; or simply bolting back in terror to their village homes, carrying infection with them. Most of the building came to a dead stop. The rest went forward, thanks to Pennycuick and his staff, upheld by the white man's creed that, whatever ills or discouragements may befall him, the work must go on without fail.

In the half-deserted camp all infected huts must be burnt down, all remaining ones fumigated ; lime sprinkled freely—in the teeth of coolie lamentations ; all drinking water boiled, though they would promptly refuse to drink it, even as they refused all medicines. No refractory river could

be more difficult to deal with than a hoard of ignorant and superstitious human beings.

Finally, in desperation the whole contaminated camp was shifted to the far side of the river : a wearisome transfer that put a stop to other activities till it was over. But they had their reward. When all was accomplished, the cholera ceased from troubling ; and the work progressed with reduced numbers, to its appointed end. From September 1888 until January 1890 that heroic struggle went doggedly on—and the river did not have the last word ; though the engineer, who has recorded the exploit, frankly confesses : ‘ Had it not been for the medicinal virtues of arrack (a strong native alcohol) it is difficult to see how the Periyar Dam would ever have been built.’

Thus even the satisfying of a bodily need may serve a higher end. In this connection there arose a dilemma as to how this expenditure on arrack was to be entered in the detailed account of expenditure. The giving of free drinks to coolies—however essential to the work in hand—was a little matter of expense not recognised by Government of India codes. If plainly stated, the examiner of accounts would, to a certainty, raise fatal objections. Yet the money must be spent and accounted for as truthfully as might be. A bright spirit suggested that ‘ pegs for workmen ’ might disarm criticism and hit the mark. Down went the arrack under that heading. No questions were asked ; and ‘ pegs for workmen ’ flowed freely to the salvation of countless coolies and the Periyar Dam.

It may be of interest to add that this vast tank has since been so greatly enlarged that its present area amounts to about 20,000 acres, a water supply for which Madura has cause to bless Colonel Pennycuik and his fellow engineers.

When the ‘coffer’ dam was at last achieved, actual masonry work could begin. But good Indian masons are hard to find. Wages must needs be high ; so any ambitious, half-educated man who could borrow or steal a pair of old boots and trowel would unblushingly offer his services—often with dire results. For other skilled labour they relied mainly on the Portuguese, who proved themselves excellent work-

men, willing and honest ; many of them sailors, familiar with water and its ways. From beginning to end they were of the utmost value to that handful of Englishmen in their fight against the elements : eight years of it all told—a state of life hardly conceivable to the routine worker in the civilised West.

But if conditions were harder, interest was keener, and the final achievement proved its own great reward. Pennyquick and his staff knew later, if not at the time, that, in the long tale of engineering marvels wrought for India, few, if any, have surpassed the building of the Periyar Dam.

In the early 'nineties, with a better type of coolie, better organisation and more practical experience, the rate of progress increased. Nor was that pluckiest of her kind, the English Memsahib, wholly absent from the scene. Wives of officers, whenever possible, ventured the rough journey from Madras up to the high jungle valley, where that band of devoted men were ceaselessly at work. Mrs Pennyquick came often, and at times even brought her two small children, to cheer their father with a sight of them. On his shoulders rested not only the burden of work, but of supreme responsibility for the lives of all concerned.

And now the almost incredible day of completion began to look not quite so impossibly far off. Steadily the great wall rose ; and behind it the river rose also, till at last it was impounded into a spacious mountain lake, its waters ready for transfer through an open cutting to the mouth of the tunnel that must pierce the rocky crest of the ridge.

The huge concrete dam, when complete, rose 173 feet above the river-bed ; its length at the base of the V-shaped gorge measuring two hundred feet, and at the top, 1240. Those bald figures, conditions apart, convey not a tithe of the labour packed into that impressive barrier, nor can a bare record of events give any idea of the strain on mind and body, the frequent physical dangers, the alternations of triumph and despair. Colonel Pennyquick himself—responsible for both design and execution—described the building of the Periyar Dam as ' the most anxious, difficult and embarrassing work ' of any within his large experience.

And that was but the approach to his main purpose. Having imprisoned the most refractory of rivers, he must now blast and bore a mile-long tunnel for its exit through the granite ridge: a difficult piece of normal engineering not unduly delayed. On the far side a short open cutting led the released waters to a steep natural ravine; and down it they could fling themselves to join the Vaigai, transforming that starved stream into a river of life such as the patient peasant folk of Madras had never beheld in all their days.

At last the long-delayed morning dawned when Colonel Pennycuik and his staff could say, 'It is finished': a simple statement of a far from simple fact.

On the 10th of October 1895 Lord Wenlock, Governor of Madras, presided over the impressive opening ceremony: an assembly of distinguished British visitors, fringed by a vast outer throng of Indians, eager to behold a miracle that must be seen to be believed.

The signal was given by cutting a twisted strand—the red and blue of R.E. ribbon twined with the gold and blue of Cooper's Hill. Then did the head-waters of the Periyar River appear in full flow on the eastern slope of the Southern Ghâts: a marvel greeted by cheers from the British and shouts of delight from astonished Indians, who flung garlands into the rushing water to propitiate the spirit of the conquered stream.

Miracles apart, the genuine wonder remained that human skill and courage had triumphed both over such mighty forces of Nature and over obstacles without end. After eight years of toil and persistence almost superhuman, and at the cost of £500,000, a river ordained by Nature to flow through well-watered Travancore into the Arabian Sea had been potently persuaded so to alter its course that it now faced the rising, not the setting sun. Tamed into a beneficent canal—thirty-five miles of it, with 216 miles of tributaries—it would now bring to life and fertility at least 100,000 acres of desert land.

And the main credit for that great engineering feat rested

indubitably on Colonel John Pennycuik, R.E., a man of outstanding ability who had been in touch with the scheme for twenty-seven years, had completed the final survey and translated the impossible into the actual: a major service to Madras and its people that should have earned him a knighthood at least. But no doubt—with the natural modesty of his kind—he felt himself amply rewarded by the totally inadequate C.S.I. conferred on him, coupled with the thanks of Government to his admirable staff for ‘distinguished services on a particularly difficult occasion.’

During those eight years only one among them lost his life—H. Scott Taylor, a man of exceptional promise who was killed in a machinery accident, after proving his quality as executive Head of the works for four years. But the total of deaths from sickness and all causes reached a high figure, which actually exceeded the British fighting casualties during the whole South African War. This may sound excessive; but it is a fact too little recognised that no big enterprise of the kind can be carried through without a long death-roll that must be balanced against the number of other lives that are likely to be saved or benefited by the finished work. In this particular case the number must run to millions and to many generations of peasants dependent on the land.

But although the river had taken its toll of those who dared to rob it of freedom, it was a few undefeatable Britons who had the last word.

Such is the plain tale of a unique engineering triumph, seldom, if ever, excelled.

Only when the stir and dust of actual labour has subsided there arises the practical question as to whether the achievement has justified its cost in time and money and lives? Could it be reckoned on to fulfil its main purpose—to benefit permanently the country and the people of Madras?

To that query there can be but one answer. The almost incredible feat of impounding so vast a quantity of water and dispersing it over miles of desert did virtually transform the whole Madura district and the lives of its people and

banish the spectre of famine. Wells, cattle, crops, pasture and fish—all in their degree—must have felt the benefit of a transformation not measurable in rupees, but in the renewed lives of men and cattle, the first consideration of a just and humane Government.

According to Akbar the Great, 'God has said from water all things are made'; and he did much in his own day towards making 'the parched ground a pool.' But the Mogul Emperors were chiefly concerned with creating a flow of water for royal gardens. It was the alien British Government—in the process of 'exploiting' India—that concerned itself in practical fashion with the peasant and his yearly dilemma.

A full-sized book would hardly suffice to record in full all that has been made from water in the past century, through the conquest of desert areas by British skill, courage and enterprise, to the increase of revenue and enriching of the whole land. It is a record of which they, and successive Viceroy, have a right to feel proud, since it has been justly described as 'one of the most far-reaching services to humanity ever made by man.'

One can but attempt a partial picture of the complete change wrought in the Punjab—a change hardly credible to those who knew that arid Province forty or fifty years ago. The full vitalising effects of the Punjab Canal Colonies can only be realised in sharp contrast with a picture of Indian famine before its worst ravages had been overcome by that practical magician—the British engineer.

THE SPECTRE OF FAMINE

1

DARKNESS DISPELLED

*' Plough deep for the autumn sowing, then pray for the
springtide grain,
Your bullocks may plough till they drop, yet the fruit
of their toil be in vain ;
For what is the profit of ploughing, if Allah withhold
the rain ? '*

—PUNJAB PROVERB.

THE grim, yet poignantly human story of India's major affliction, with its twin terror pestilence, must be seen in perspective—a long backward look—to gain a clear idea of the contrast between conditions of mediæval India and the gradual changes brought about, in the last hundred years or so, by British skill, persistence and a racial sense of responsibility.

Throughout that later period Viceroys and civilians have wrestled not merely with problems of famine relief, but with India's endless variety of customs, prejudices, religious restrictions and taboos, with the added strain of fatalism common to a people for whom prosperity and life itself are at the mercy of uncomprehended natural forces. Baffled at times by these unfamiliar elements, British men and women have persistently done their human and fallible best. The task of contending with 'one damned thing after another' has been long and unheroic and often disheartening. Early mistakes were many—not all irrevocable. Transport problems were solved. A measure of understanding was gained through knowledge and personal experience. The spirit that animated the whole complex struggle was in itself a guarantee of victory—if not over unbiddable forces, at least over the ills they inflict upon the children of men ;

till at last there came a time when it could truthfully be written, 'Famine no longer finds the people at its mercy.'

The full significance of that plain statement can only be grasped by a glance at former tragical occasions, when famine decimated whole cities and the people *were* completely at its mercy.

To begin with, one must briefly picture the Indian peasant's normal round of life, his entire dependence—physical, financial, social—on that incalculable element, the great monsoon. Its vagaries affect far more than his food supply from year to year. They condition the character and outlook of the people, to whom it seems—not unnaturally—that the monsoon is in command of affairs. It needs personal experience of Indian village life, and its pathetic dependence on the 'great god Climate,' to convince even the Western mind that, in such a case, only the negative courage of their fatalistic philosophy of acceptance can avert despair.

'Climate has made of the Indian what he is,' writes Major-General Fuller, 'and Climate will make of him what he is to be, . . . when every effort of Western man has failed.'

Sir Frederick Lely—one of Britain's most eminent and humanly sympathetic civilians—has justly said that if one man of the West could intimately share the monsoon experience of Indians—that and no other—he and his fellows would get nearer to understanding them, to feeling *with* (not *for*) them, than by a whole year of normal surface contacts. 'For the monsoon,' he adds, 'has exercised as deep an influence on Indian life and character as our insularity has upon ourselves. The vigorous Anglo-Saxon belief that man is master of his fate sounds a mockery to people whose very existence depends on the yearly advent of a "wind that bloweth where it listeth." Until the British Government came and took famine by the throat, there was nothing left for the humbler, weaker Indian, on a failure of rain, but to sit down and die—as he most often did every other year, in one region or another, under native rule. Small wonder that the cumulative effect of such recurrent failures has been to diminish self-reliance and power of initiative.'¹

¹ Sir F. Lely: *Paper on Famine*.

When the rains fail not, the pantheistic Hindu sees that welcome visitation as 'the coming of the Storm-God, Indra, whose mantle is the sky, whose jewels are stars, whose chariot is a cloud, who rides on the wings of the south-west wind.' The matter-of-fact Englishman is content to call it the monsoon: a yearly downpour that varies from five hundred inches over Assam to less than three inches over Sind. Its northward journey to the Himalayas can be followed on the map; for the usual way of its coming varies little, if at all.

In Northern and Central India the brief, spring-like turn of the year begins in March. With the advent of April, heat intensifies. Dust-storms and sharp thunder-storms bring passing relief; and the rarefied air draws up a rain-laden current from Ceylon, where the monsoon breaks in three-fold splendour of thunder, wind and wave. Palm groves, lashed by the tempest, are bowed and swayed like fields of corn. Thence the chariots of Indra roll on, to hurl themselves across the Southern Ghâts, emptying their largesse of rain over Central India and Gujerât, one of the Garden Provinces, where seasons of drought are hardly known. Desert Rajputana is poorly served, and Sind has only been saved by the mighty River Indus and marvels of modern engineering from becoming a total desert. The rains, in their northward sweep, cross the arid Punjab to the foothills of the Himalayas—fifteen hundred miles of mountain barrier from Kashmir to the wilds and tea plantations of Assam.

On the map it will be seen that one large corner of the country has been debarred from Indra's benediction; but as the sun shifts to the south, a backward current of air passes down over the warm Bay of Bengal, where it is finally distilled on to the rice-fields of Madras. In most seasons that vast programme works almost like a well-run railway system; but there is always the risk that some unforeseeable deflecting influence may upset the regular rainfall, bringing a flood here, a drought there; and only those who have lived through it know the dragging suspense of that dread uncertainty.

For close upon three months a ruthless sun has been

scorching and pulverising the patient earth. Hot winds have been whirling powder of dust through every crevice. Metal and stone, in the open, are too hot to touch. Cattle, wandering in parched fields, grow thinner and weaker as the rainless days crawl past. Men whisper anxiously, 'When *will* the Rain-god come? What news from Bombay?'

At last a merciful drift of cloud stains the blinding blue; it spreads and darkens, wind-driven; darker and darker till, in one grey sheet of water, down comes the rain, churning dust into mud, reviving half-withered leaves and grass, cheering anxious men with the assurance that once more the main crisis of the year has passed.

But—if Indra's coming is unduly delayed, men's hearts contract with a too familiar dread. Rich men pay Brahmins to chant prayers in their temples. Women drench emblems of their favourite god with precious water to indicate their need. Headmen and mayors of cities lead processions round the walls, pouring out libations of milk at every gateway, not forgetting to feast the hoard of well-fed Brahmins—let others starve who may.

The people themselves, when all fails, will sometimes fix a day to leave their houses in a body and cook their small store of food in parched fields under a blazing sun, in the pitiful hope that the Rain-god will accept the offer of their deserted village and be turned from his fell purpose.

'You that would lay bare our fields, take our empty houses instead,' is the prayer implied in that pathetic gesture of despair. But the Great Ones are deaf alike to propitiation and appeal; and as July burns itself out the stricken folk begin to realise that there is nothing to hope from their 'first line of defence—the gods.' Only then do they turn towards their last hope—local officers of the British Government, credited by many with godlike powers; and in these they find their salvation in so far as goodwill and practical help can mitigate their dilemma.

The extent of that dilemma can only be gauged by a glance at earlier famine conditions; and these alone can give some idea of the merciful changes that have gradually been brought

to pass by a humane British Government and the untiring devotion of many individual Famine Officers.

From tales of the first Chinese pilgrims to India, until the latest yearly report of Moral and Material Progress, the word famine has been scrawled across almost every page of her history. Believers in a half-mythical Golden Age are apt to insist that famines under Indian rule were fewer and less severe: an assertion that is not supported by a tittle of historical evidence. In fact, the old 'Jatāka' books accept famine as a recurring affliction common in a land where agriculture is the mainstay and rainfall periodic; and its horrors may be gleaned from surviving chronicles of a prolonged drought that befell in the golden prime of the Emperor Shah Jehān, 'when life was offered for a loaf, but none would buy; and rank could be sold for a cake, but none cared for it; when powdered bones of the dead were mixed with flour and men began to devour each other, so that a son's flesh was preferred to his love.'

Whole cities were emptied of living people; the dead decaying where they fell, for there was none to bury them. Pestilence followed inevitably; and again there was none to stay or cope with it.

An English sailor, travelling between Sūrāt and Agra, has left a grim detailed account, still extant, of 'highways strewn with dead people; so one's nose was never free from the stench of them. For they are dragged out by the heels, stark naked, all ages and sexes . . . till the way is half barred with them. Women were seen to roast their own children; and travelling men were laid hold of to be eaten. One, with much of his flesh cut off, was thankful to escape with his life.'

Under the Moguls famines were frequent and devastating; their effects often intensified by internal wars and interludes of rank misrule: a state of affairs fatalistically accepted by the main sufferers, peasants and their families, till the British Government, in the interests of the country and the people, 'took famine by the throat': a fact often conveniently ignored. With demonstrable truth it has been

said that 'there is no single aspect of British rule in India on which impartial investigation can more confidently be challenged.'

The East India Company recorded many famines in the eighteenth century. These were usually local, the chief handicap being scarcity of transport for shifting grain to stricken districts. To them roads and railways came as angels of deliverance. They did, in fact, revolutionise relief and rescue the people from recurrent dread of starvation.

For all that, the road to deliverance wound uphill all the way. Difficulties abounded; complications were increased by custom, prejudice, religious restrictions and India's infinite variety.

When the scourge fell on Madras in 1877 the wheat-growing North gave of its abundance to the rice-eating South. Relief carts came among them piled with good grain, only needing to be ground; but, in expressive Babu phrase, 'it was all as if to milk the ram.' Madrassi peasants knew nothing of grain or of millstones. They clamoured for rice to be hulled in their mortars; and, finding none, they crept away weeping, back to their bark and weeds, their grubs and clay. Sooner than touch strange food, they preferred to die in sight of plenty—and did so, by the score.

Yet the persistent Briton—constrained to be his brother's keeper—carried on the long struggle against Nature and human nature; disheartened often, mistaken often, yet never deflected from the end in view. And in the long-run, as will be seen, he and his kind were justified alike of their faith and works.

After the Mutiny, when India came under the Crown, a new spirit informed the crusade against famine. Every effort was made to prevent actual starvation by an elaborate scheme for famine relief that aimed at keeping unimpaired India's own social structure, based on mutual help, while it avoided the demoralising effect of indiscriminate State intervention. 'Arm-chair critics' may carp at this or that; but those who have personal knowledge of Indian conditions—human and climatic—can only marvel at the progress

made, each recurrent famine being more effectively dealt with than the last. But before the most remarkable modern canal schemes were even conceived, there befell the Great Famine of 1899-1900—'the worst in extent and intensity that India had experienced for two hundred years.'

Even a partial tale of that valiant fight for human lives is worth telling, since it is eminently a story of unsung heroisms and endeavours. Civil servants and their Indian assistants, missionaries and doctors, all worked nobly, in complete accord, to one end; and although no human power could prevail against the high gods in relentless mood, it stands on record that 'the success actually attained in relief of distress and the saving of human lives was far greater than any yet achieved in earlier famines at all comparable with that one in severity and duration.' The whole campaign was, in fact, 'one of the most remarkable achievements in scientific administration.'

THE GREAT FAMINE (1899-1900)

*'Not as a ladder from earth to heaven, not as a witness to
any creed,
But simple service, simply given to their own kind in the
hour of need.'*

—KIPLING.

THE first dread foreknowledge of calamity began in July 1899, when for weeks parched earth and anxious peasants vainly awaited the delayed monsoon. Would it ever arrive? Signs of ill-omen increased daily: prices rising, private charity dwindling, men wandering aimlessly in search of work, since no harvest would mean no field labour. Grain dealers began refusing credit, and beggars infested the towns. When all these things coincide, officers begin looking up their relief programmes and preparing for advance action, knowing the importance of moral strategy when anxiety hovers over whole villages like a bird of prey.

In the East, hope swiftly sinks into fatalistic resignation; and the people had not fully recovered from their ordeal of '96-'97. To lift their sinking hearts and combat fatalism was the need of the hour. In all districts meetings were held, committees appointed, helpful activities encouraged; liberal advances given for work, wherever obtainable. Yet neither courage nor action could stave off the oncoming tragedy. Everywhere wandering folk and wandering cattle sought vainly for stray green leaves. If any were found, the sacred ox and cow would have first claim to be fed; for on them hung the lives of all: the ox for ploughing and pulling their carts; the cow for milk, butter and the staple village fuel, cow-dung.

As conviction grew that the monsoon had really failed, more persistent and more pitiful became the efforts of despairing villagers to save their cattle. Famished themselves,

they crept about seeking wisps of straw and plant stems, snatching handfuls of thatch from their own roofs. They climbed trees and perseveringly picked off every green leaf that remained, producing an ironic effect of wintry boughs against the blazing blue of a mid-August sky.

At this time a new cause of death began to figure in official returns made out by babus with a limited knowledge of English. Every week, it seemed, a number of men died from 'trefall,' a disease unknown to Famine Officers. On inquiry it was found that the hapless ones had fallen from trees while gathering leaves for half-starved cattle: first victims of the famine that was stealthily tightening its grip on them all.

In Gujerāt—a Province that had never known even scarcity for a hundred years—the people had grown soft and indolent from generations of comfort and ease. Lacking the grit and stamina of hard-bitten Rajputs, they staggered under the shock of positive failure not only in crops but in fodder and water supply—a threefold calamity that practically wiped out the peasant's working capital; and in their case the saving of cattle was an even more urgent matter than elsewhere. For Gujerāt herds are reckoned among the finest of their kind in all India.

How to prevent extinction of these famous breeds was a problem that taxed the wits of local Famine Officers, who were expected to solve every puzzle in creation—and did so, with results that veered between the surprisingly successful, the tragic and the comic. So hard it is for East and West to work in unison, even with the best will on both sides.

The comic element was provided mainly by the cattle.

Treated through centuries almost as human beings, they have developed human qualities more or less like the cat and dog of Europe. The villager's ox, a member of the family, is lodged in a room as good as his owner's. He has the freedom of the village, and may help himself from any open stall; while her holiness the Cow is worshipped as Giver of Life by the whole family and better fed than many of its members. Next to farm and field, these famous herds are the chief source of income to a Province full of wealthy

men. Those favourites of heaven found themselves, now, confronting a calamity undreamed of in their philosophy. For the first time in living memory they experienced a hot weather unrelieved by a single shower of rain ; saw themselves in danger of losing their main source of prosperity—oxen, buffaloes and milch cows. Roughly there were two million head of cattle in the Province, with never a blade of grass or wisp of hay for them to eat. So safe did the people feel themselves, that those who happened to have a surplus store of hay had sold it all as export, to their bitter regret. Railways could bring in enough to feed the people ; but grass was another matter, when every full-grown beast would devour two truck loads before the next rainy season fell due.

Here was full scope for British ingenuity ; and from the cudgelling of brains there emerged a simple solution of the problem.

If grass could not come to the cattle, let them be taken to the grass ; removed wholesale to regions where it was plentiful. Trains, that were pouring in with grain and fodder, could carry back chosen animals to the forests and pastures of Thāna, in charge of a vigorous Civil Officer, who would play Providence to the precious animals, allot their grazing-grounds and arrange for their safe return.

The plan seemed impeccable ; but the would-be saviours had reckoned without the villagers and (as it proved) without their cattle also.

Stoutly the Gujerātis refused to let the pick of their herds be spirited away to some strange land, even under care of the Sirkar,¹ whose active zeal for their benefit awoke suspicion rather than gratitude. So rarely does the average Indian act without some hidden motive, that he is quick to discern or imagine it in others ; and there are few things that he finds more incredible than the disinterested spirit of the white man at his best. Cattle owners asked each other what was at the back of it all ? And rankling suspicion gave rise to a sinister rumour. The British were known to be fighting a hard war in South Africa. Obviously they needed

¹ Government.

beef for their white soldiers and oxen to pull their waggons. All this talk of Thāna forest was a blind ; and the Gujerātis were not 'eyeless men.' Firmly they believed that, once their valuable cattle were removed elsewhere, they would never be seen again.

Preventive action was taken promptly, with dire effect. Picked animals, already collected for despatching, were secretly smuggled back to their owners. Hard-worked Famine Officers—half in anger, half in dismay—saw their sane, practical plan wrecked by a crazy fabrication that could not be convincingly disproved. Suspicion, of all mental states, is the hardest to combat. Where the motive is doubted, words avail nothing ; yet in the people's interest some attempt must be made to disprove a libel that could only spell disaster.

A meeting of cattle-owners was called, and they came readily enough : hundreds of shrewd, weather-beaten men, respectful and friendly, but suspicious still. After much argument and counter-argument they agreed to the proposal that a dozen animals should be sent to Thāna with two local farmers in attendance, to see what became of them. The Famine Officer, blessed with a sense of humour, took no umbrage at the implied doubt. It only reminded him of the Israelites sending spies into the Land of Promise to make sure that it was not a trap. Permission was gravely given ; and these modern spies returned with no bunches of grapes, but bundles of grass to prove the existence of pasture and its quality.

But one problem solved proved only the prelude to another. Confidence having been restored, the eagerness of owners to save their precious herds became positively embarrassing. Far more animals were offered than could prudently be sent ; and of these the poorest specimens far exceeded the rest, to the dismay of Famine Officers, who aimed at saving the pick of young healthy beasts to return and breed new herds that would restore prosperity.

Vain hope ; the Gujerātis being, by religion, mainly Jains—a Hindu sect that regards all life as sacred. An orthodox Jain may not consciously cause the death of any

living thing—be it the most noxious, the most dangerous, the most minute. So the rich merchants of Gujerāt, blind to all practical values, effectively countered the white man's heartless policy by chartering special trains that carried away not the best but the worst of their herds, on much the same principle that men of the West would rescue first the aged or helpless from a burning house. Harassed Famine Officers must therefore endure the mortification of seeing train after train depart filled to capacity with refuse animals ; many of them dying on the way ; none of them likely to return.

Yet the persistent West could not be wholly cheated of its will to help the unhelpable. A fair proportion of the best stock was ultimately transferred to Thāna at Government expense ; but this time there were the animals to reckon with. Like their owners, these also had ' gone soft ' from ease and plenty. They were worried by rocky ground. Local water upset them. Unfamiliar grass did not nourish them ; and their herdsman, who knew their ways, had no taste for banishment to a foreign country. Without the smallest concern for their charges, they bolted back to Gujerāt, leaving an over-worked British officer to cope with deserted cattle. In the midst of rough plenty they died by hundreds. After all the trouble taken and the money spent, not forty per cent of them ever returned to Gujerāt. No doubt the white man was blamed, though he had done his desperate best. Because his valiant efforts had failed, the valour and the effort counted for nothing.

Back he must fare to Gujerāt, where hay at last came pouring in. No respite for the officer in charge, who must now cope with the complexities of distribution : the forming of cattle camps—no such simple affair as it sounds. For the Indian ox and cow are people of character. Through centuries of human treatment they have acquired 'clubbable' qualities ; and it was soon found that they must be grouped in their camps not by age or size but by the villages from which they came. Those who belonged to the same 'set' knew each other and kept perfect order, promptly obeying the herdsman's voice. Far from hustling the little ones—

as had been feared—the older beasts took care of them in most exemplary fashion.

Sir Frederick Lely tells of an occasion when their good manners were sorely tried. On the first day that a basket of coveted oilcake was carried into the enclosure they rushed the man who brought it, almost knocking him over in their eagerness for a share ; but a little reasonable reproof soon took effect. At sight of the oilcake man, they would range themselves in a row, each one politely awaiting his or her turn with a self-restraint that was almost human, not in any way mere obedience to an order. ' One incident,' adds Lely, ' I should hesitate to mention, if it had not come to me—through an eyewitness whom I can trust entirely. In a certain camp several sick animals had been set apart to receive special food, while the more robust looked on with covetous eyes. Temptation and envy quickened their wits to some purpose. Next time the special food came round, several of them lay down pretending to be sick, that they might share the privilege—with what result the eyewitness has not recorded.'

By May, most of the useless cattle had died or been eliminated ; and the wealthy were straining every nerve to save the valuable few that remained. By that time their resources were running low. Urgently they needed some outside help to tide them over the next two months till another monsoon was normally due to arrive.

It was then that an appeal to London resulted in the opening of a Mansion House Fund, and a response generous beyond all expectation. Famine Officers were authorised to buy up all available stores and re-sell to genuine cultivators at a nominal price.

Here was news to revive even the most despondent. Lely recalls how often he stood in the depot, among those whom he had so tirelessly striven to help, when peasants with their carts came flocking in for a share of the precious fodder, often from a distance of fifty miles. To these he explained, in their own tongue, how their brothers and sisters in far-off London—fellow subjects of the Great Queen—had heard of their trouble and sent out money to help them. ' If any

subscribers to the Indian Famine Fund of 1900,' he adds (writing in 1907), 'had been present, it would have done them good to see the care-worn faces light up at such news. I felt, myself, that here was a bond of Empire more real and more lasting than any Bismarckian blood and iron.'

Not all in vain, then, were the persistent efforts of a Famine Officer responsible for an area the size of an average English county. Second only to the cattle came all produce of the fields; and the result of that year's harvest was precisely *nil*. Hardly can dwellers in a temperate clime conceive the pitiless aspect of Nature in the grip of a prolonged drought, or realise its heavy demand on the physical powers of man and beast. The very spirit of desolation broods over all; its tragedy intensified by the sense of human helplessness to cope with the influx of starving wanderers from worse afflicted regions. The strain on Government systems and relief works—for this one corner of India only—was beyond conceiving, except by those who have played the little-appreciated part of dealing with famine at its worst. Conceive the state of England if, in a single year, the land could become a desert and every factory, every mine, cease work. Imagination boggles at the wild idea; but here was dire reality: two million folk of every age and variety completely dependent on Government or direct charity for their daily bread. These ranged from small respectable farmers, at one end, to workless wanderers and wild hillmen who, at sight of a white face, darted into their huts like rabbits into burrows; and in every Province famine workers were hampered by a mass of people fleeing from chaotic conditions in the Native States.

Even among normal folk there were decent men too proud to join relief works; others too lazy or too timid; well-born women who would die, gentle and uncomplaining, sooner than show their face to a stranger or accept outside help; sick and aged and children deserted by their parents. No imaginable system, however well planned, could possibly cope with every form of need or suffering involved. The whole scheme must be flexible, leaving much to individual judgment; and it demanded a high degree of discrimination

to strike the true mean between the reluctant, who shrank from State help, and the over-readiness of those who had been demoralised by it ; to hold the balance between relieving genuine need and overtaxing demands on the public purse. Even a seemingly slight error might do irreparable harm ; for if the people were allowed to run down physically or become disheartened, it might prove impossible to lift them again : a heavy burden of responsibility to be laid upon a humane-minded officer, very much alive to the fact that, East or West, in plenty or privation, man does not live by bread alone. Even among the semi-starved, their need was for more than food. The whole depressing situation, the monotonous famine diet, affected not only the body but its twin elements the mind and soul. Experienced Famine Officers know that there is only one sure way of pulling the people through the ordeal of a prolonged drought—keeping up their courage and inner vitality, their will to live. Never let them lose heart and hope.

Yet again in dispensing wholesale relief, the zealous white man must learn to temper sympathy with shrewdness ; must keep a sharp look-out for vagabonds quick to snatch advantage from relief, without doing a hand's turn themselves. Riding here, there and everywhere through the stricken land, he must keep his wits alert, his heart kindly, and both eyes very wide open. Let him find people starving by the roadside, he must discover why they have not sought relief ? If relations or friends, on any works, were being harshly separated instead of grouped together ; if the food was bad or overcharged, he must intervene to put matters right ; must, in fact, play Providence to the improvident. And the East is seldom grateful to him who interferes, even for its benefit. Broadly speaking, East and West may be roughly classified as the people who never trouble to interfere, because man's life is fate-ordained ; and the people who feel constrained to interfere, because man, up to a point, is master of his fate, spurred to attempt the improbable by a measure of the faith that moves mountains. Whether they of the West are loved or cursed for their disinterested zeal is beside the mark. The best of them are simply con-

cerned to mitigate suffering, as far as may be, and save the lives of those who often seem to care little whether they live or die.

It may be hard for Western readers to believe how many had to be saved in spite of themselves. Take the case of a District Officer, riding on his rounds, who noticed an emaciated woman with her babe, creeping away at sight of him behind a hedge. At once he dismounted, found her in almost the last stage of exhaustion, and galloped on to the nearest village for a litter.

When he returned the woman, who could scarcely crawl, had disappeared.

For a full ten minutes he searched before he found her hiding in a thick bush, hoping to escape from the stranger, whose only intent was to save her and her child.

It might have been the truer kindness to leave ill alone ; but that is not the way of a race that sees itself instinctively as its brother's keeper.

Sick and starving children— orphaned or deserted by demoralised parents—were beyond the scope of District or Famine Officers, even the kindest ; though Kipling's unconsidered hero in *William the Conqueror*—collecting famine babies and keeping them alive on goat's milk—may very well be based on fact. Certainly, in Gujerāt, hundreds of children would have died but for the care and loving-kindness of devoted women missionaries, British and Indian. Angels of rescue—heroines, known only to their fellow workers—they sought out the wretched little ones and mothered them back to life ; asking and earning no reward beyond the gratitude and devotion of the people.

Children apart, the whole problem of help and relief in that favoured Province was perplexing and heart-breaking enough to baffle even experienced officers. None could have believed that so prosperous a land would succumb so completely to a single year of drought. Life exacts a price for too much prosperity and ease ; yet, even in adversity, those fate-favoured Gujerātis were fortunate enough to have their famine relief administered by Sir Frederick Lely.

At that time he was Commissioner of Ahmedabad, an

eminent civilian endowed with special knowledge of that Province and a peculiarly sympathetic understanding of the people, by whom he was better loved and trusted than any official of his day. And not he alone. In every way, throughout that trying time, he owed incalculably much to the devotion and encouragement of his wife, who threw herself with an equal enthusiasm and understanding into every form of relief work. In her active zeal for the orphanage and the cattle camps she was a recognised example to all British wives throughout the Province. Nor was she unique among her kind. Taken all round, the Anglo-Indian woman has received, even less than her menfolk, the recognition that is her due.

Lady Lely and her husband were at one in recognising the importance of preserving family life, in spite of mass emergencies. The essential unit of the race, it is also, in India, a basic element in their religion. Hence the acute distress of Indians at having to leave home or village. The more respectable the family, the more they shrank from separation lest it lead to immorality. Yet it was patently impossible for a limited staff to feed, piecemeal, thousands of folk in hundreds of scattered villages. What with local favouritism and neglect, the whole elaborate arrangement would soon have got out of hand. Fathers and brothers, shirking unfamiliar work, would have stayed at home with the families, preferring to take from others a share of the food they were too lazy to earn for themselves.

Women and children who were genuinely unfit must be moved into huts near the relief works, where they could fetch or be served with the 'mess of pottage' handed out twice a day to separate groups: the men in one; wives and mothers in a second; children in a third; since these often required protection from the rapacity of hungry parents. Close by lay fever-stricken hospital cases, served by devoted women missionaries. But all these had first to be sought for and found, and persuaded into the only practical way of salvation.

No task could be more difficult and delicate than that of the officer who must seek out those sensitive people and save

them from starvation without wounding susceptibilities or sanctities that meant more than life itself to many pitiful yet often most admirable women of higher rank, whose family life is so mysteriously hidden that the outsider may not even seem to know of their existence ; and they themselves, in their aristocratic exclusiveness, would not have it otherwise.

There were men also of higher caste and good family who needed special consideration ; men who before famine ruined them had owned large herds of cattle, and had lived at their ease by making butter and raising stock. Now they had no choice but to starve or attend relief works, where they must break stones, pile up embankments or do any other rough form of unskilled labour—they who had never done a day's manual toil. Their blistered hands and hopeless patient faces could not but provoke pity.

Very hard also was the lot of artisans and craftsmen, especially weavers, who shrank from relief work, fearing it might roughen their hands and blunt the delicate sense of touch essential to the inherited craft by which alone they could live when normal times returned. These owed much to kindly missionaries who gave them yarn, supplied by private charity, and took back the woven cloth.

The record of all those who distinguished themselves by 'great devotion' to their arduous task include civilians, doctors, officers of the Army, Police, Public Works, and notably Forest Officers, 'whose way of dealing with the shy, untractable hill tribes was beyond all praise.' When cholera came and Indian assistants fled, every man stayed at his post and carried on alone the department under his charge.

Of special note is a tribute paid to the most unlikely-seeming famine helper of them all—the British soldier. It happened in the earlier drought—'96-'97—that a certain Commissioner of Patna was offered seventy non-commissioned officers to take charge of relief works : an offer he perforce accepted with grave doubts of the result. To most Indian villagers the British 'Tommy' seems a fearsome person, possessing little knowledge or sympathy, ignorant of their language, ways and customs. Yet those alien soldiers

adapted themselves, in the most remarkable way, to unknown people and strange surroundings. They proved themselves so patient, so humane and sympathetic, that they very soon won the complete confidence of all who worked under them. And proof abounds that those seventy men were not notable exceptions among their kind. A spirit prevails in the British Army—both among officers and men—unguessed at by those who dismiss the soldier as a necessary evil hardened by military training and paid to kill.

Adversity is a touchstone of character. In time of war, plague, famine, the high-lights of human courage and endeavour shine out against the deepest dark of tragedy and torment. The need to cope with a major calamity brings men together in a life-and-death struggle. It strips away surface differences of race and creed, welds them in a common trouble, a common task. Famine relief, in particular, aims at more than saving life. It aims at enkindling a belief in the worth of life and the natural brotherhood of man—twin values that are not sufficiently recognised in the East. It seeks also to encourage self-help against pitiless forces of Nature. In most cases this is uphill going; but the British rarely work to better purpose than when they are evolving order out of chaos, and helping others to do likewise. Indians, in such a case, are handicapped by climate, creed and heritage, by a low ebb of vitality and little reserve of physical or moral resistance to prolonged strain.

For it must be remembered the effect of a famine takes time to develop. Thus it was with the oncoming of a second hot weather, in April 1900, that fear of the worst reached its highest tension. Complete failure of the monsoon would bring upon them not only famine, but dysentery, fever, cholera, largely induced by bad water, low vitality and the nerve-strain of fear.

By May, over two million people were 'on relief' in the Central Provinces; in Gujerāt eighteen per cent of the population.

Before the end of June, with monsoon failure almost a certainty, came the inevitable climax—cholera.

Into every British-Indian tale of work or human endeavour

that inescapable terror enters late or soon ; and if a sense of repetition irks those who merely read of its ravages, let them consider the effect of actual repetitions on those who are fated to endure or contend with them. Almost as fatal as the dread disease is the panic fear of its advent in time of famine : panic that positively invites the thing it dreads. Courage and steady nerves are the best antidote against infection, the best aids to recovery, if attacked. Doctors, knowing that, save more lives by keeping up mental and physical stamina than by any drugs in their dispensaries. Missionaries also most often use spiritual stimulant with good effect to combat the Indian's too frequent lack of a normal will to live. The very patience, which at first makes them so easy to deal with, recoils against the Famine Officer when a wave of cholera decimates them, and neither precept nor example can brace them to stand up against it.

Yet, outside India, how little is known of this continuous fight, not only against disease and death, but against fears, prejudices and superstitions of a people in bondage to all three.

Bald detail of day-to-day doings can only bring home to imaginative minds a tithe of the strain put upon those unconsidered workers. It is theirs to save or sustain the dying, to arrange for burning the dead ; and, by some means, to rouse whole communities from the lethargy of weakness or despair.

These things, that make no great outward show, are required of the white men and women who work mainly behind the scenes, day in day out, week after week, month after month, in wearisome iteration ; disheartened often by the sense of so much thought and effort expended with so little apparent result.

Throughout that 1900 famine, of unexampled severity, many of them literally stood for months between the living and the dead. In some cases Indian subordinates stuck manfully to their posts ; but very often the higher British officers were left almost alone to manage camps crowded with the dying and to bury the dead. Deeds done during that famine are worthy of epic narration. To tell them in

full would take a volume. One can barely touch the fringe of a tremendous campaign against death, with the lives of nearly 60,000,000 people at stake, which engrossed the energies of the whole Administration, from the Viceroy downward.

Sir Frederick Lely, who bore the brunt of the fight in Gujerāt, gives a passing glimpse of five men, out of the scores who spent themselves to the uttermost.

‘There are Maneklal Narbheram, who went, a healthy vigorous man, to the district of Broach, and for six months never spared himself night or day. He returned a wreck, to die a year afterwards. A brave and steadfast man who knew what was before him and did it. There was Mulligan, Presbyterian missionary, who volunteered to help and was put in charge of a thousand persons on a relief work, where cholera had already taken hold. There was Mcwhinney, also Presbyterian missionary, who undertook a similar trust in an adjoining Native State. Each of them took up his abode in a hut among the people; restored order and cleanliness and instilled some of his own courage. Then each, within a month of the other, was stricken with the disease from which he had saved many, and died the death of a Christian.

‘There was also Jenkins, a Civil Engineer, in charge of works in the Panch Mahāls. He was lying in his house with high fever upon him, when word was brought that a certain work would soon be stopped and the people dispersed if further alignment were not made. He got up and travelled to the place; did what was needed, and then returned, with his illness much aggravated. In a few days he, too, was dead.

‘I make no apology for mentioning these names, for the blood of such men is the seed—and the sap—of Empire.’

The above are quoted by Lovat Fraser, a well-known Bombay Editor; and, on his own account, he adds: ‘There were many such. Indian and Englishman, they died together. When I hear Secretaries and Under-Secretaries of State telling civil servants that they must be sympathetic and not arrogant, when I hear Anglo-Indians slandered by people who have

spent a month in India, when I hear missionaries denounced as "idle loafers," I think of these things and of all the brave and kindly English men and women whom I have seen bearing with fortitude exile and the trials of climate in lonely places in the tropics, eager only for the better welfare of those around them, and beloved by the people in their turn.

'Such incidents as these are legion ; and one more comes to my mind as I write. Martin Wood, a young Bombay-civilian, was in charge of a Gujerāt district, so heavily smitten with cholera that the people fell into a panic and began to flee in terror. To give them confidence, and to save them from wandering over the countryside to die of hunger, Martin Wood had his meals served in the middle of the rough cholera hospital, amid the dead and dying. The expedient was a strange one ; but when the people saw he was not afraid they took courage also—and the panic was stayed.

'Only those who have seen a cholera camp can fully appreciate the courage of this solitary young Englishman with 80,000 people is his charge. His senior officer did equally brave work in burying cholera corpses himself when the burial-sweepers had fled.'

Lovat Fraser pertinently adds that, although there has often been room for criticism as to relations between British and Indians on particular occasions, he feels constrained to protest against indiscriminate denunciation that conveys a wholly wrong impression to our own people.

'And when we are distributing sympathy,' he concludes, 'let us not forget the claims of men and women who are doing the work of England in alien lands. . . . There is a great deal of excellent, yet ingenuous advice proffered by Ministers as to how public servants in India should comport themselves ; but of sympathy and encouragement, in a task of extraordinary difficulty, hardly a word.'

It is certain that public servants, high or low, needed no ministerial hints on correct behaviour during the Great Famine of 1900.

Towards the end of June the worst of the cholera had spent itself and again all eyes began to search the heavens

for some sign of the belated monsoon. By that time over six million people were 'on relief': a number to which there is no parallel in India or any other country. It was a strenuous and tragic opening to Lord Curzon's famous seven years of rule; and his own inherent greatness rose to the high demand.

In the autumn of 1899 he had visited many centres of disaster; and now, in the fierce heat of late July, he set out upon another famine tour through the worst districts of Gujerāt: the kind of attention from on high that makes a special appeal to rural India.

It was the most critical moment of the famine that now affected some 475,000 square miles. The monsoon had vouchsafed no more than a sprinkling of rain. People swarmed on the relief works, breaking stones, piling up embankments, all manner of unskilled work that could be devised for helping them to help themselves—the only sane way of salvation, East or West. In many of the camps visited by Lord Curzon cholera was still active; but the coming of the Lord Sahib into the worst regions touched all men's hearts and lifted their spirits on a wave of hope renewed. It was as if the gods, who seemed to have forsaken them, were taking heed of their plight. Conviction deepened that, through his benign presence, a mysterious power would work for their good: a great change would suddenly take place.

And so it actually befell.

The tour had not long been in progress when the heavens darkened, the wind rose—and down came the rain, swiftly changing the baked and barren earth into a slough—not of Despond.

The sudden change, however welcome, plunged Lord Curzon's party from one extreme into another, typical of India—the land of extremes. Roads, ankle-deep in dust, were almost obliterated; and the horses could hardly keep their feet.

To reach one camp they were making for, a river must be crossed; and the party, dismounting in pools of water, must tramp through greasy mud to their destination. In spite of the weather a complete tour was made; and all were wet through when they prepared to return. By then, every

gutter had become a stream, and the swollen river was impossible to ford. The only other route was doubly dangerous in its changed condition. And this experience was but one among many during a tour that had not its like in living memory.

Lord Curzon, with his characteristic energy, had resolved to see for himself how the people fared. He went over many camps and hospitals ; riding through heavy rain, tramping through deep mud ; all sense of discomfort outweighed by an immense relief that the worst was over and his presence everywhere hailed as that of a god, who had commanded the rain to fall—and it fell.

That prevailing sense of the miraculous seemed to be affirmed by an episode characteristically recorded in an Indian paper at the time.

'Who says that in this age of infidelity Divine intercession has ceased to work, or that there is no Divine appreciation of human goodness? Our noble Viceroy intensely wished that the famine must cease, and the long-delayed rains come. Such a wish is a prayer. And the prayer has been granted. Lord Curzon started to visit the dry and burnt plains of Gujerāt ; but he had scarcely done so when the rain fell in torrents, and his prayer was granted even unto the full. Take yet another instance of Divine intervention. A Bombay telegram says : "The Māhi River in the Panch Mahāls is in flood owing to heaviness of rains and the railway line is six feet under water. *Curiously enough the line was covered just after the Viceroy had passed over it from Dohād, but the water subsided before his return ;* AND NO SOONER HAD HE PASSED THAN IT ROSE AGAIN !"

'The man who telegraphed this remarkable fact used the word "curious." But here, to our mind, is a double proof of Divine intervention. The gods have begun to bless Lord Curzon. May the blessing light also upon the millions whom the Viceroy seeks to serve and succour. . . .'

Miracles or no, Lord Curzon's experience of India's most terrible famine went far to intensify his conviction that irrigation, on a larger and wider scale than any yet, must rank high among the first 'twelve subjects on which he had

resolved to concentrate all his constructive energy.' More canals, more railways ; only so could one hope to make an end of famine and disprove the Congress libel that India's age-old affliction is a direct result of British rule. He became henceforth an irrigation enthusiast, with results that will be clearly revealed in the chapters that follow.

Meantime he was intent on winding up the Great Famine,¹ completing the record of its death-roll—mainly from disease—its tale of inconspicuous heroism, its immense cost to the Indian Exchequer—a total of six and a half million pounds in direct relief. There had also been generous loans to landlords and cultivators, only half the amount ever redeemed ; and land revenue remitted to the extent of one and a half million. Private charity, British and Indian, had been munificent ; relieving distress in ways outside official scope.

And nothing could exceed the princely generosity of Lord Northcote, then Governor of Bombay. At his own expense he saved from extinction the famous breed of cattle that represented more than half the prosperity of Gujerāt. Under the Director of Agriculture he set up a cattle farm for the pick of the dying herds, now so nearly extinct that it was long before three bulls of any worth could be discovered. To these were slowly added 300 cows ; and, later on, lesser camps were formed. In this way, out of two million splendid cattle, a bare 9000 were saved. 'Not a great achievement,' was Lely's modest comment on this. But it was worth doing ; and at least the breed could carry on.

Lord Northcote did many beneficent things during his governorship of Bombay ; but nothing that he did is held in more grateful remembrance than his saving of the cattle in Gujerāt.

The last word in connection with that great famine rightly rests with Lord Curzon, on whose coming administration it had a marked effect.

Speaking of it several years after at the Royal Society of Arts, he said : 'Looking back on the experience of that time, I know not whether more to admire the uncomplaining resignation of the people, or the heroism of the officers,

¹ Lovat Fraser : *India Under Curzon*.

English and Indian, civil and military, to whom the charge of those suffering thousands was committed, or the devotion of missionaries of every nationality, women as well as men. . . . Most of them rest in forgotten graves ; but I hope it is not presumptuous to believe that their names are written in the Book of Life. Let those who wish to see what the British Government is capable of doing in India, go there, not in prosperous times, but when the country is in the throes of a great famine. They would then see what no Government in the world, except our own, is capable of undertaking now ; and what I firmly believe that no Government, European or Indian, by which we might be conceivably succeeded, would dream of undertaking in the future.'

THE DESERT AND THE SOWN

TRANSFORMATION SCENES IN NORTHERN INDIA

1

PROBLEM OF THE PUNJAB

1

'No nation has yet created monuments of engineering activity across the seas comparable with those of the British in India. The consolidation of that country has been, in no small measure, the work of Engineers.'—Lieut.-Colonel E. W. SANDES, D.S.O., M.C., R.E. (retd.).

THE story of the Punjab, looking backward, shows a sequence of sharp contrasts like its climate, the brilliant winter months and the blazing hot weather; on the one hand, a procession of Kings, gold jewels and barbaric colour, the blare of trumpets, the tramp of conquering hosts; on the other, a dust-coloured background to the silent fight of the peasant against deified forces of Nature: literally a fight to hold his land—his few acres that belong to him and his heirs.

It is no exaggeration to say that the Punjab breeds the finest peasantry in Asia: tall and sturdy, their features well marked, their eyes steady, their heritage a blend of many fighting races. The majority, though of Rajput stock, are Moslems by conversion. They are known as Punjabi-Mussulmans; and are second to none among recruits for the Indian Army. Born and bred in a climate of extremes, they are hardy and of fine physique, brave and persistent and profoundly attached to their own fragments of earth.

It is this deep attachment to his village, and its traditional *panchayets*¹ system, that largely gives India her permanence and stability. Each village is a self-contained republic,

¹ Council of elders.

with its 'head-man' and council of five : simple, yet shrewd judging men, who have learnt little from books and much from Life. Their characters have been largely formed through generations of difficult dealing with Nature ; so great things may be done for them if they are kept free from the perversions of industry and city life. The Pax Britannica, which enabled them to till their fields in peace, gave them also an interest in producing a saleable surplus. Roads and railways gave them access to outside markets. Prosperity increased ; and in return a grateful peasantry remained loyal through the critical period of the Mutiny. But the Punjabi, like all men, has the defects of his qualities. His very independence makes him quarrelsome and prone to incessant litigation ; though, taken all round, his merits far outweigh his defects ; and as a soldier he has proved his valour and loyalty on a score of battlefields.

The Sikh, in particular, is at his best under military discipline, and less deeply tinged with fatalistic pessimism than the average Moslem or Hindu. Not for nothing did the greatest of Sikh Gurus, Govind Singh, forbid his disciples to smoke. For among Indians, with their ingrained indolence, the hookah is tempter-in-chief. It has even been said that the Indian woman rises early to work ; the man rises early to smoke—and again smoke. The enforced abstinence among Sikhs may partly account for the energy and enterprise that have made them pioneers of colonising at home and abroad. Drink and love of money are their chronic failings, both kept within bounds by Army discipline and active service.

It is, in fact, to their fame as warriors, and the fine fighting record of the Punjabi-Mussulmans, that the Province owes its proud title, ' The Sword Arm of India ' ; as also a historical and political importance out of all proportion to its size, population and very few cities. The Sikhs themselves, though small in number—little more than three million—are paramount in prowess, as they have given proof in many famous units of the Indian Army.

Fighting apart, agriculture rather than industry is the Punjab's true line of progress : a trend that has been encour-

aged by a notable succession of British military and civil engineers. Thanks to their astonishing achievements, India's engineering record stands second to none. More : it is the British themselves who have linked up the whole sub-continent—physically and mentally—by road, railway and canal, together with the prevailing English language ; and not even roads or railways have done more for the land and people than the almost unregarded Irrigation Department responsible for the making of India's unrivalled canals.

At this time of day it is difficult to believe that early pioneers in that line were looked on, by many of their fellows and most of their seniors, as faddists, cranks and visionaries ; that for years irrigation was thoroughly discredited ; handicapped both by lack of funds and lack of official belief in its far-reaching possibilities. Only the loyal help and zeal of certain young executive officers enabled several of the early works to be carried through at all. It was engineers who recognised and asserted that in the Punjab water was gold ; that ' given water, the Province might well become the granary of India ' : statements probably derided as fantasy in 1900, yet amply proven less than forty years later.

Even when the immense project of the Chenāb Canal was under weigh, and its famous designer, Colonel S. Jacob, R.E., told the then Chief Engineer that the canal would eventually water 2,000,000 acres, the answer was, ' Impossible.' But again and again, in history and in human lives, it is the impossible that most surely comes to pass, as it did in the case of the Lower Chenāb Colony—a brilliant experiment that needs a chapter to itself.

The irrigation branch of the Public Works Department is, in many ways, a peculiar service, demanding more from a man than scientific and constructive skill. An Irrigation Engineer must not only be able to build canals, he must know how to use them and work them to the people's best advantage. He must also possess a flair for personal administration.

In earlier times the Executive or Assistant Engineer would

often be the only white man in a large area ; the Sahib, to whom all Indians would turn instinctively when beset by difficulties, or chronic quarrels over each man's due share of canal water for his crops. The Punjab Government has, on the whole, been singularly lucky in finding young Englishmen of the right stamp, which may partly be due to the high standard set by the founders of Cooper's Hill College, partly to the dual demand of the work itself.

The prejudiced may belittle, they can hardly refute all that India owes to those unassuming young Britons, who held their informal Courts of Justice under a tree or the open sky, admonishing here, punishing there, 'indifferently administering justice' to all, as easily as they had solved the problems of the prefects' room not many years before.

In more recent times an M.P. visitor to India tells of a sometime undergraduate lent by Government to an Indian Prince, to speed up the completion of a coveted canal ; 'and speed it up he did, to the Prince's satisfaction and his own.' The writer adds, 'He is just the kind of civil servant who has built up India and the prestige of his service. It is as difficult to get him away from the work as it used to be when he was wrestling a First in History from the Oxford Examiners by the naked power of industry ; and, like most of his kind, he is losing something of the elementary joy of living in the process.' But some price a man must pay for the privilege of building up a great country and leaving his mark on a fair portion of it.

The story of irrigation has a human element, the more interesting and impressive because it deals with no mere profit-making concern, but with the bringing of life and hope to millions of impoverished people. Profitable its great schemes have certainly been as to increase of revenue ; but, taken all round, 'the irrigation of the Punjab is undeniably one of the greatest humanitarian works ever performed by man. And those who initiated it, who faced the early failures, who extended it between war and war, who handed it over to their civilian successors—were the military Engineers of India.'¹ The civilians, who followed

¹ Colonel Sandes, R.E.

after, were worthy in all ways of the soldiers, who have led the van in almost every phase of India's onward destiny. Yet even the most brilliant names among them, with a few exceptions, are hardly known outside India ; nor have many of their lives been written. Their work itself, most often carried out in lonely places, rarely brings them into the public notice ; though its after-effects on the landscape are sufficiently vivid to impress all who have eyes to see.

' Few experiences are more startling, or more stimulating,' writes Lovat Fraser, ' than to pass, on a hot October morning, from the confines of the Indian Desert into an irrigated area. The train rattles on through a region of rolling sandhills dotted with camel-thorn bushes and clumps of tamarisk. At intervals a few rude huts are passed. The very stations are mere structures of mud, innocent of platforms. Clouds of dust whirl about the train. . . . You marvel at the grim determination that could build a railway through such an Arabia Petræa.

' Suddenly the whole scene changes before your eyes. You are in the midst of a new country, a lush and fruitful land ; tall crops swaying in the breeze, gleams of water, villages full of well-fed people, flocks and herds right away to the horizon. . . . Thus does the Irrigation Engineer perform miracles in a region of thirst and aridity. The soil is precisely the same as that of the desert ; but industrious engineers, using old channels and cutting new ones, have carried water from many hundred miles away ; have attracted crowds of colonists and brought whole villages to birth as if by magic. Water was all they needed. The sun, on a fertile soil, that had lain fallow for centuries, did the rest.'

Yet this crown of British achievement seldom wins even passing attention from the political or journalistic visitor, who comes out on a cold-weather tour to swallow India like a huge dust-coated pill ! Earnest inquirers will spend weeks in discussion with Indian politicians, and not dream of spending even a few days in the study of engineering marvels more eloquent and conclusive than the ding-dong of argument. To the men who have created these marvels the earnest inquirer gives never a thought. It was the Honourable

Alfred Deakin—a former Prime Minister of Australia—who first took the trouble to inspect the early Punjab canal systems, and recorded his opinion that ‘the finest product of irrigation in India has been, and is, the gallant company of its engineers.’ Enormous responsibilities are theirs; and they have discharged them with as much courage, as much success, as their fellows who have stormed hill forts and faced the tremendous odds of battle.

The soldier is an obviously romantic figure. The engineer is not, in the tuppence coloured sense of the word. Yet in essence he is a votary of the true romance, as seen and felt by Kipling :—

*‘What is, is Thine, of fair design,
In thought, and craft, and deed;
Each stroke aright of toil and fight
That was and that shall be;
And hope too high, wherefore we die
Has birth and worth in Thee.’*

Whoever strives for perfection in art, or craft or mechanical design, is an artist after his kind; working in the spirit of ‘The True Romance,’ unaware of it though he may be.

Engineering, especially in the canal department, is one of the slowest and, at times, most monotonous of all creative occupations; yet in many ways its attraction is irresistible. To the engineer is given the artist’s satisfaction of seeing his work grow under his hands: a deeper satisfaction, in the case of a great irrigation project, that will not only bring credit to his service, but assured means of life to countless human beings. Engineering is, in fact, one of the great professions, though too seldom so regarded by the world at large.

Irrigation works themselves are so conspicuous, while the men are so unobtrusive, that few can fully realise the skill, the close thought and the invincible perseverance that must underlie such gigantic operations.

In the chapters that follow I hope to give some idea of the actual day’s work, the strain, the responsibilities and the triumphant results that have again and again been brought to pass by Mr Deakin’s ‘gallant army of engineers.’

2

*' For these, from birth, is Belief forbidden,
From these till Death is Relief afar.
They are concerned with matters hidden ;
Under the earth hid their altars are ;
The secret fountains to follow up ;
Waters withdrawn to restore to the mouth ;
To gather the floods, as in a cup,
And pour them again at the city's drouth.'*

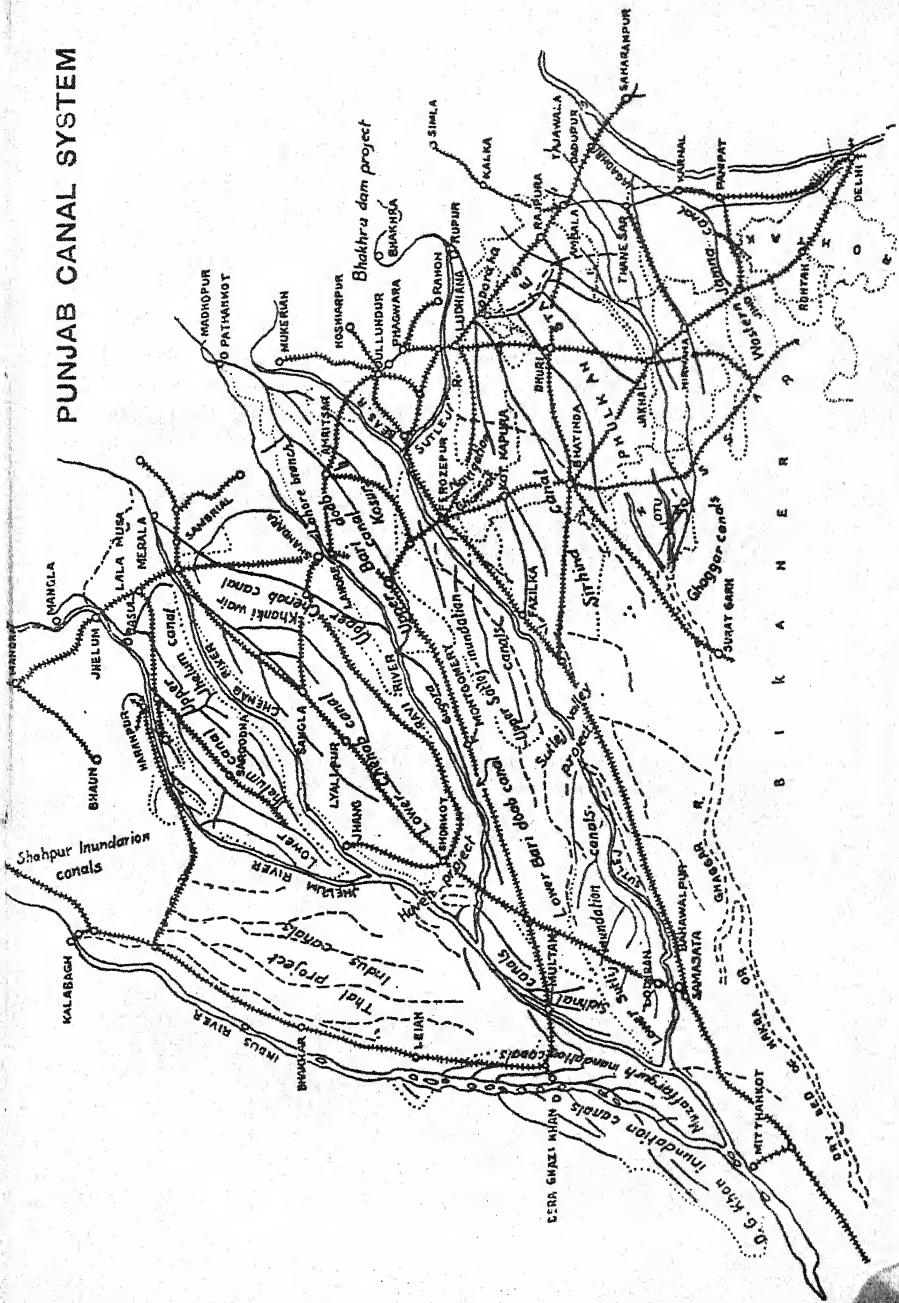
—RUDYARD KIPLING.

To begin with, it is not easy for dwellers in a temperate clime to recognise the peculiar importance of canal building in a country like India. In England a canal is little more than a curiosity, or at best a convenience ; while a tank is simply a piece of artificial water framed in concrete. The idea of storing water against seasons of prolonged drought has seldom entered the Western mind. But the Punjab, with its great snow-fed rivers, has a rainfall of little more than ten inches a year ; and the unconsidered peasant had become inured to accepting what the gods saw fit to provide, till at last the English came and after a prolonged struggle virtually ended the tyranny of the great monsoon.

For thousands of years Indian rulers had allowed those noble rivers to flow almost uselessly across the great plains and empty themselves into the sea, leaving the people mainly dependent on wells. In most cases the subsoil water was drawn up by the old device of the Persian wheel ; the small buckets, fixed to its outer rim, falling and rising and again falling as the great wheel is turned by the blindfolded bullock, who patiently ambles round and round the low parapet to the musical whining of the axle and splash of falling water.

The earlier canals, as we have seen, were mainly built by the Moguls to serve a royal garden or shooting-box. For the storing of water great tanks were used, especially in Central India, where forest-clad hills and plateaus did not lend themselves to canal building like the plains and uplands of the Punjab.

PUNJAB CANAL SYSTEM



Many of the great tanks in Central and Southern India are veritable lakes, like the Periyar reservoir ; often set in wild and beautiful scenery with a water-spread twice that of Scotland's Loch Rannoch. Such is hardly the idea that a word so inadequate conveys to the Western mind ; and Sir Hugh Keeling, a distinguished engineer, tells amusingly of an American traveller who wished to see a tank in Central India.

Curious and unsuspecting, he was put into a night train, bundled out of it, in the smallest hours, at an embryo station and transferred to a country cart warranted to pulverise every bone in his body. Released from torment at the foot of a hill, he was told he must walk up it if he wanted to see the tank.

Dismayed, but still curious, he dragged his feet up the rough hill path. Dead-beat he reached the summit—and found himself standing on the shore of an inland sea !

A tank ? He could motor round and see a lake twice the size of that anywhere in his own country. Possibly he overlooked the significant fact that this one was made, not by Nature, but by British engineers.

From these vast reservoirs the surplus rainfall is released, by means of weir and sluices, to fill canals and to feed the crops of cultivators, who have by now arrived at accepting the miracles performed by Western man as part of the order of Nature.

To guard against overflow from an abnormal monsoon, the great embankment, or *bund*, built across a high valley, must be raised well above normal water-level, and fully completed before the first risk of flood. The least miscalculation in the making of that *bund* may mean acute anxiety for the engineer, who will be held responsible for damage done by the uncontrollable clouds of heaven. If by any error the *bund* should burst, money, labour, time and even life may be lost, as they were over and over again in the Periyar adventure ; while the engineer concerned may 'lose face' from the failure of a work into which he has put all of himself for months, possibly for years.

Here is the tale of an actual experience in Central India, before cars had come to save time and anxiety.

The *bund* of a certain tank in a high valley had only just been completed before the first monsoon storm burst in fury. The engineer (Hogarth Todd), anxious for the safety of his new tank, rode out from the nearest railway station, through a grey mist of rain, only to discover on arrival that the essential waste weir had never been finished by his assistant, hardly even begun; and all the coolies at work on it had promptly fled to their homes.

Slowly and steadily, in the darkness, the huge volume of water was rising behind the new earthwork; and once the tank was filled, without an escape weir, it must inevitably overflow, burst the embankment and deluge the country, drowning villages wholesale. Yet no coolie could be found to face the downpour of that torrential night; and in any case it would have been foolhardy to attempt a cut in the embankment in darkness and deluge. Only one thing could be done: lift the great sluice and trust to the strangest of all strange gods—Chance.

By some means the sluice was lifted and the waters rushed out with the roar of distant cannon; but the discharge was as nothing to the deluge that the rain was bringing in from a twenty square-mile area.

Let him tell his own tale of the climax:—

‘I spent a very uncomfortable night in a small inspection bungalow with the roar in my ears of water flowing out of the sluice on one side and the incessant drumming of rain on the roof overhead.

‘No sleep for me while this went on; no way out of it that I could see; and I should get into trouble. I knew what the verdict would be—and the question, “Why did you trust a subordinate?” Vain to argue that I had to be elsewhere during the last six weeks of the working season. I knew in my heart that I had been badly let down by that wretched subordinate. He should have seen that the waste weir was ready. Yet I could not blame him. Clearly I was “for it” if that tank burst; and it seemed certain that it would go very soon.

'The rain poured down harder than ever. I jumped out of bed in my agitation and began to pace the small room by the dim light of a lantern.

'At nearly the same moment the miracle happened. The roar on the roof suddenly ceased. It was most dramatic : as if someone had pulled the cord of a shower-bath. And it did not recommence for some days, by which time the level of the water had sunk low enough to save the embankment and the situation.'

Another episode, of quite a different kind, takes us up to the hill wilds of Assam, where rain falls yearly to the tune of over four hundred inches as against ten to twelve inches in the Punjab ; and it happened towards the end of the last century.

It is a tale of three young Englishmen fresh from Cooper's Hill and the Executive Engineer with his wife, who had been warned not to come, but was plucky enough to relish a taste of adventure, and proved herself a valuable addition to the party. Jungle cutting, to pave the way for some engineering scheme, was their tedious unvarying task from morning till night. Two would do the cutting, while two went off 'shooting for the pot'; and the Memsahib would deal skilfully with their trophies—if any.

Daily they must move on ; no water, no chance to set up an advance camp, till they had worked their way seven miles up the valley, and provisions were dwindling. For ten days no letters arrived to cheer them, though twice a man had been sent to the nearest office to ask if there was no *dhak* for the Sahibs.

At last one of them went in person to spy out the land. The postal Babu, as usual, reported 'no letters of any kind,' but the tiresome Sahib insisted on a thorough search—not without result. Securely locked up in an old chest he discovered a whole fortnight's mail ! The Babu, unable to speak or read English, had not known what to do with the paper curiosities that went on arriving, so he had carefully hidden them. It was the merest luck that he had not burnt them.

Letters revived their spirits, but not their famished

bodies, though the Memsahib excelled herself at devising dishes from anything that came to hand, rice being the chief mainstay—thin diet for hungry men. Mixed with tinned cheese it was a luxury when meat failed ; and even curried ship's biscuits were welcomed. Rain and damp were incessant. Pushing through deep jungle, they were saturated to the waist each morning on their way out to work. Malaria thinned their ranks ; and of leeches and mosquitoes there were no end.

In one high camp wild elephants paid them unwelcome attentions. Fires burned all night to keep them away ; yet twice the whole camp was destroyed. Tigers also honoured them, in spite of warning fires, and carried off their valuable goats. Finally, in order to get out of dense jungle before the spring rains began, they had to work seven days a week from dawn to dusk. There was not time even to shoot for the pot. It was an event if they bagged an old pheasant, a few pigeons, or a very occasional deer ; and at times they came perilously near to starvation. Fierce premature rain-storms hindered their work ; and their huts were by no means watertight. That arduous hill survey, beginning in February, was finished by April ; all of them, including the invincibly cheerful Memsahib, fairly worn out : an unspectacular achievement that, as usual, was simply taken for granted by the Indians and by themselves.

But our main concern is with the Punjab, a country eminently adapted for canals, its uplands a great plain sloping downwards from the foothills to the Indian desert. No Province is better served as to rivers or more ill-served as to rainfall, except Sind ; but the rivers, as I have shown, were not utilised till the coming of the British, when the whole Province was engineered by Colonel Robert Napier under Sir Henry Lawrence. In fact the Punjab, as annexed in 1849, was little changed from the state in which Alexander the Great had found it two thousand years earlier. Since then a single century has seen the birth of a canal system twice as great as the famous Egyptian one that was developed in the course of six thousand years.

In fine, British enterprise, capital and engineering skill have, between them, raised the Punjab from its early status as 'the pauper Province' to the richest agricultural area in the world. The cost, in money and lives, of building those first headworks and miles of canal can hardly be conceived by readers who know little of India or of the civil engineer. His exigencies, despairs and ultimate triumphs provide no dramatic story. His work is slow, often monotonous and disheartening, usually a matter of years, anxiety and constant strain on his health that may prevent him from seeing it through.

Again it is Hogarth Todd who tells how, as 'a Cooper's Hill cub,' he shared the honour, minus the glory, of building headworks for one of the great Punjab canals.

These are most of them stupendous affairs. At some carefully chosen site the huge masonic dam, on a succession of arches, must be built across a river which may be anything from a mile to several miles wide. The dam includes a weir with iron under-sluices that can be moved up or down to regulate the flow of water according to seasonal vagaries.

The making of those headworks involved a rapacious army of contractors, thousands of coolies and skilled labourers under a large Indian staff; the whole complex plan of campaign depending on three white men—the Executive Engineer, his assistant and young Hogarth Todd, not yet able to speak the language. Between them all the work progressed with occasional 'alarums and excursions': a hundred different operations in constant progress, each one depending on some other. Seen from the high bank on the roadway across the dam, countless coolies, hurrying this way and that, looked like a colony of ants building their nest.

From November to May, with the river at its lowest, all went well, and the Executive Engineer was cheered by the companionship of his wife. But the onset of hot weather sent her to the hills; and when the monsoon arrived, in late June, Nature took a hand in their complicated affair.

A telephone message announced that the river, farther up, was rising rapidly, some snow-fed stream in the far hills having burst its banks. A flood was imminent. The effect

of it might reach the canal works in a matter of hours. The three white men looked at one another. There was nothing to be said ; everything to be done, that could be done in time. The 'Cooper's Hill cub' may have felt a thrill of excitement at the prospect of experiencing his first flood. The others knew only too well what was before them.

The alarm gong sounded. The stream of ants in the river-bed broke up into scurrying confusion. Orders were shouted—and some were obeyed. There was a wild rush to save all that could possibly be saved before the flood was upon them. If the rising water topped the embankment, it would destroy the work of months. The loss of material would be incalculable.

Meanly, the flood arrived at night, catching the hapless coolies encamped on a high bank of earth in mid-stream ; their terror intensified by conviction that the river was angry because the Sahibs had dared to take liberties with it to serve their own ends. The Sahibs, unconcerned with elemental wrath, proceeded to rescue the hapless ones by boat, cleared up the ruins of their great endeavour—and began it all over again.

Everything rested on the shoulders of the Executive Engineer, whose hair went almost white under the double strain of work and incessant anxiety. For it took years to complete an undertaking that proved to be one of the most successful canals in the Punjab.

The Executive Engineer earned a C.I.E.—and was content. He expected no more for having done successfully what pleased him best in life and played his humble part in the work of creation ; but he never regained his lost health ; and died a comparatively young man. The willing horse, overdriven, may fall by the wayside ; yet his achievement remains, after his passing, to astonish the beholder.

That is the true reward of the engineer. He leaves his abiding mark on the country, changes its aspect and enriches the lives of its people. It was well said by Sir Louis Dane, as Lieut.-Governor of the Punjab, 'It is the engineers who are the real builders of the prosperity of this Province. Thanks to them India may now be entitled the first irrigation

country in the world. No name, indeed, will stand higher, in the rôle of her benefactors, than that of the Irrigation Engineer.'

In spite of this just tribute, civil engineers, on the whole, are among the least regarded of their kind; partly perhaps because official and even social India is departmental all through. One service will often be an unknown country to the others. The Administration, with all its merits, is in essence a bureaucracy. 'The Report reigns unrivalled. Red Tape is King and Sealing Wax is high priest.' Yet the officials themselves are most of them picked men, clever, conscientious and of high integrity; failing at times in sympathy, rather than in spirit, in manner rather than character. Nor are the Services entirely free from the official snobbishness that is rampant socially. And the P.W.D.¹ men, like those of the Forest Service, work mainly in the wilds of desert or jungle. Of the lives they lead and the wonders they accomplish their fellows in other Services know little and perhaps care less; nor are they much given to talking of the work that most of them would not exchange for any other on earth.

One major trial—months of isolation—has been largely mitigated by the spread of railways and the motor-car but, without these, the life of a canal engineer was one of the loneliest among many lonely professions in India. Even his fellow engineers he could only meet at times, over some large 'project.' Between whiles, he would be encamped in a remote, often unhealthy, spot; lucky if he was on construction rather than maintenance, which involved touring miles of dismal canal bank, possibly shooting a bird or two, and ending the day with a solitary meal of curried goat or ancient fowl in some desolate *dak* bungalow. The long, unvarying vista of most Indian canals is tinged with a melancholy that often leaves its lasting mark on a man. Happily there are not a few unquenchables who can strike a spark of humour out of almost any situation and save their souls alive.

A story is told—with probable truth—of one young

¹ Public Works Department.

engineer who had set his heart on a particular race-meeting in which he had more than one stake. Boldly he applied for leave that week on the ground that he could not get his hair cut in camp. Headquarters dismissed the frivolous request; but the resourceful youth bided his time. Later on he lodged a complaint that his uncut hair had become a serious inconvenience, dropping over his eyes and hindering his official correspondence.

That bold stroke took effect. Leave was granted. The high official, dining out one night, met the persistent youth in urgent need of a 'hair-cut'—and discovered that he was completely bald, probably owing to some virulent fever. Perhaps the exalted one himself had a saving sense of humour that could relish the joke and overlook the impertinence. There is no record of any reprimand.

Another wayward subaltern, who was criticised for extravagant outlay on paper and postage proved equal to the occasion. By way of retort courteous he used, for Headquarters' correspondence, the thinnest and lightest paper procurable—a brand sold by chemists. What the retort official may have been the delinquent did not reveal. Enough that he had spiced his loneliness with the sauce piquante of a ribald joke.

10 Even a praiseworthy attempt to take some human interest
in the people may only lead to embarrassment, as in the
case of a kindly young engineer who unhorsed a plump
Indian riding along the canal bank, while behind him
trudged a heavy-laden woman. Her he hoisted, protesting,
on to the pony, and rode along with the pair of them for a
mile or so, to ensure fair play.

Presently, to his surprise, he found that the woman was silently weeping.

'What's wrong now?' he asked. 'You ride in comfort and your husband walks, as he ought to do.'

'But, Sahib,' she wailed, 'I do not know this man. And your Honour is taking me away from my own home.'

Triumph for the dethroned male. Embarrassment for the Sahib, who would henceforth tend to keep his finger out of Eastern pies.

Such early failures, however trivial, may have the ill effect of discouraging friendly approaches to the simple yet intelligent peasant folk, with whom the Canal Officer will have to spend most of his service. Whether in camp, or on tour, or on construction, he must work with them, day in, day out, except for the respite of his brief yearly holiday. In the event of any big local undertaking the peasants actively co-operate, not by compulsion but of goodwill. If labour is short on certain works, the whole village may be marched out, with drums beating and rhythmic thud of feet. Greybeards look on and cheer them. Young women carry earth in flat baskets on their heads. Fruit and cheap refreshments await them all on arrival at the scene of action. Nowhere has the human touch a more magical effect than in village India.

When a threatened breach in a *bund* must be prevented or stopped up, the willing response becomes a very *tamāsha* : the huge crowd organised into regular lines of march ; everything prepared beforehand ; poles poised, brushwood stacked, mats and sandbags laid in order.

At a given signal the real warfare begins : a resolute fight against the river, who is seen as a living foe to be foiled at any cost. Poles, mats and sandbags are their ammunition, pounced upon and carried down to the breach, where the poles are thrust deep into the river-bed, brushwood flung across, mats spread, baskets of earth flung upon them ; until, amid a frenzied thrashing of drums, the damaged *bund* rises and is strengthened so that it can withstand the full force of the stream. Victory is hailed with shouts of applause and improvised dances of triumph ; celebrated in the evening with fireworks, feasting and a few presents. Finally the victors, breaking up into groups, drift homeward under a canopy of stars, proud of their day's work ; indifferent to sacrifice of time and labour in a common cause, and well pleased with the engineer Sahib, who has diplomatically secured their services in saving the *bund* and completing his season's plan.

The larger canal schemes are marked off into divisions, each under an Executive Engineer, perhaps in his thirties,

with two British Assistants and Indian Staff. Even a small division will usually include headworks, commanding a thousand miles of canal and 250,000 miles of watered acres.

The Chief Engineer has the power of a Raja, with far more difficult duties; the whole outcome depending on his own capacity and initiative. From first to last he is engaged in a ceaseless duel with the river he has coerced and subdued, but never entirely subjected to his will. Nor can the true place or manner of conflict, after truce, ever be foreseen. Even when all seems quiet and traffic normal, a ceaseless watch must be kept on each movement of the river by the ever-alert engineer, whose first duty is to ensure exact distribution of water into the channels that feed neighbouring fields or villages. Quarrels among peasants over their supply are fierce and frequent; quarrels that must be diplomatically settled by that patient man of all work, the local Sahib.

In pre-telephone days all information from up-stream came by wire. The first might arrive at cockcrow, followed by fifteen or more during the day, gauge cards and reports that must be studied and tabled so as to keep the water-level; neither too high nor too low for the needs of many thousand peasants, who would fling in requests according to changes of cloud or their own caprices.

If gauge reports vary unduly, there may be risk of overflow; and there can be no sleep for the engineer. All night the tick-tack of the wire seems to beat inside his brain. Reports rush in; orders rush out in swift succession. The foe is subtle and treacherous. Any weak spot in the embankment—any work scamped or neglected—will assuredly be found by the river and turned to its own advantage for the discomfiture of meddlesome engineers. Vigilance must never be relaxed along the higher reaches, far up in the hills, especially in the season of thunder-storms, when floods may be let loose by early melted snow. The temperamental River Ravi, for instance, might be almost dry at sunset, and at midnight a very torrent.

On the broad shoulders of the Executive Engineer and on the perfection of his design rest the entire burden of the

people's harvests and often of their lives. 'When storms burst and the river is up in wrath,' writes Deakin, 'when the whole country is under water and terrified people are fleeing for shelter, the Engineer must stand his ground; must see that all gates are closed, all escapes open, that gangs of men are ready with timber and branches at threatened points. He has an enemy to fight fiercer, bolder than any human antagonist. Sullen leaden skies are pouring down a thousand tons of water. The earth is riven. The structure reared by human ingenuity must somehow withstand the river's wild and desperate charge.'

In fact the engineer's professional tasks are never over. For a canal, in spite of its semi-artificial aspect, is a living thing, always liable to changes that may affect the lives of thousands. Checking and re-checking intake and output, velocity and drainage, calculating strain upon the works and how to meet it, must all go on without remission; and it is the continual strain that tells on a man, while it also tests his power of endurance. In addition, there is constant need to deal diplomatically with local notabilities, or with ignorance and superstition among helpless *ryots*, who dare not complain of enforced bribes or unfair treatment from native subordinates. When other heads of departments are seeking relief in the hills, engineers and their assistants must endure the furnace of May and June, the wasting, feverish autumn heats, to ensure the safety of summer crops, while they are plagued from on high by demands for detailed information of this, that and the other. Yet, on the whole, canal administration, with all its bureaucratic defects, is admittedly excellent. As for its major works, they are conspicuous enough and more essential than most to India's welfare. The wellnigh incredible success of the Punjab Canal Colonies attracted the attention of the world; and the creation of these, with certain other great undertakings, will be dealt with in my few remaining chapters.

It is no easy matter to single out special instances in a land where so many little-regarded wonders have been wrought by the men who 'cursed their work yet carried it through to the end'; men too near their own achievement

to see it in true perspective; fortunate if they lived long enough to see others do them justice. But the few who know anything of India will not quarrel with the choice of such unsurpassed feats as the creation of the Punjab Colonies, the Great Triple Canal Scheme and the stupendous Sukkur Barrage in Sind, the largest known single canal system and one of the greatest of its kind in the world.

In these few plain tales of engineering triumphs—apart from their value to India—we have proof abounding that 'the old tradition, the capacity for self-effacing devotion to duty and the day's work—unsupervised, unencouraged and usually unthanked—have not yet perished from this earth.'

2

RIVERS IN THE DESERT

'Behold I will do a new thing—I will make a way in the wilderness and rivers in the desert.'—ISAIAH 43.

When the British conquered and annexed the Punjab in 1849, only one serviceable canal existed in the whole great barren Sikh kingdom that had been filched, piecemeal, by its first and last self-made Maharaja, Ranjit Singh. Conquest and autocratic rule rather than development had been his aim. The welfare of the people, even his own Sikhs, did not concern him at all. In my Foreword I have already given a brief sketch of the country and its condition when it became a British possession.

Its one canal, dating from 1633, was designed to bring water from the River Ravi to the imperial gardens at Lahore. Other more primitive works, known as inundation canals, were channels cut from the great rivers; only serviceable when these overflowed in the flood season of melting snow from the hills; quite unreliable for the peasant's need.

The first necessity was to store and conserve the rainfall and flood-water of the snow-fed rivers and to distribute it over a wide area through a number of lesser canals. For this purpose no land could be more favourable than the Punjab; though even the most prescient of engineers could hardly have foreseen the transformation that would be brought to pass in little more than half a century.

Besides the old Lahore canal there were two others in the Delhi region, fed only by flood-waters of the River Jumna; and the reopening of these was the first British canal enterprise in India. The builders of these, pioneers of their craft, worked by the light of their own intelligence, without any irrigation experience or text-books, except a few on canal-making in Italy—a very different affair. 'All that could be

learnt of the canal system '—we are told by one of them—'had to be gathered from men of limited education, suspicious and corrupt ; or from cultivators, even more suspicious, who had learnt, by long experience, that their best interests required time to mislead their rulers in any matter that concerned agriculture. To do successful work, in such circumstances, needed not only a scientific make of brain, but an almost superhuman mingling of industry, temper and determination with judgment and sagacity '—qualities rare enough in young men of any generation. But from all accounts India was extremely fortunate in the type of young Britons who were attracted to the country when life out there was at its hardest. Naturally mistakes were made, and afterwards corrected. The wonder remained that so much could be done with so few resources and so many obstructions.

In 1849 the only other great undertaking on hand outside Punjab was the famed Ganges Canal already mentioned. The first entirely British work done in India, it was a stupendous creation, more like a big artificial river ; its waters carried over two actual rivers by an aqueduct or superpassage. Under other rivers it burrowed by means of a technical triumph known as a syphon. Everything connected with it was on a scale of magnitude hardly conceivable by minds unacquainted with India's immensities ; and the boldness of a project undertaken by inexperienced men, without modern appliances, places it in a class by itself ; the more so because the whole scheme was designed and constructed by a young officer of Bengal Artillery, Captain Proby Cautley, who lived to become Colonel Sir Proby Cautley, K.C.S.I., F.R.S. Errors in design, easily remedied, were less to be wondered at than that a project so vast and complex should have been conceived by a completely untrained Gunner Officer.

Canal development in the Punjab itself may be said to have originated, like much else of real value, in the mastermind of Sir Henry Lawrence—at that time Colonel Lawrence, R.A., uncrowned king of the new Province. His avowed sympathy with the conquered Sikhs led him to plead for

generous expenditure on roads and railways and, above all, on canals that would fertilise the land, and thus provide their restless, disbanded soldiery with a peaceful and profitable means of livelihood. More : canal development would benefit the Punjabi peasants, who soon showed themselves alive to their own interests by co-operating with an unusual degree of harmony and public spirit.

The country that would be watered by the revived canal lay between the Ravi and the Béas (see map) ; and was known as the Bari Doāb or waste-land between two rivers. The canal itself was to be 247 miles long, its headworks to 'take off' at Madhopur where the river issued from the hills. Thence after cutting through a high bank, its waters had to be carried across two mountain torrents before it gained the table-land, or *bhar*, a desolate tract studded with mounds of buried cities ; and chief among the three towns it would replenish was Amritsar, Mecca of the Sikhs.

The whole undertaking was in charge of Colonel Robert Napier, who had initiated the scheme ; but the project itself was planned by Lieutenant J. Dyas, R.(B.)E., a stalwart young Irishman with keen faculties, sandy hair and the vitality of his race. Having already done good work on the West Jumna Canal, he was placed under Colonel Napier ; and, at six-and-twenty, he began the great work of his life. He built the headworks at Madhopur, under pioneer conditions and drawbacks that, in 1850, were accepted as a matter of course : no maps, no time to survey the country ; yet, in spite of imperfect data, his project, as planned, won unstinted praise from Napier, prince of engineers.

The canal, in due time, added to the blessing of water, the blessing of shade from groves of trees planted along both banks ; but the five years reckoned by Dyas for its completion were doubled before the end was in sight ; and Madhopur, an obscure village, had become a flourishing British station, more attractive than most with its wild hill scenery.

For the Ravi, a river of character, put up intermittently a stiff fight against its would-be conquerors. In flood seasons, when its waters came down with torrential violence, boulders

weighing many hundred tons would be hurled along by the river as if they were pebbles. At one time it even threatened to desert its headworks for good, so that the whole costly weir and sluices had to be rebuilt elsewhere.

Not until 1859 was water first admitted into the Bari Doāb Canal—the beginnings of irrigation on a larger scale : a great work of peace and progress. Although the enterprise was initiated by Lawrence and Napier, it was Dyas who put years of work into it, with eminent sagacity and zeal.

Madhopur, with its imposing headworks, steadily grew up under his personal care ; and so devotedly attached he became to his self-created kingdom that, in after years, when called away to fill the highest position in his department, he left the Ravi with regret. Shy to a fault with those in high places, he far preferred a small remote station on his loved canal to lording it as head of a department in Lahore—a preference shared by his staff. Thanks mainly to himself and them all the waste-land round Amritsar had been transformed by the Sikhs into the most highly cultivated part of the Punjab. That was the lasting pride of his life, though he did not live to see the full completion of his project. The Ravi was not to be harnessed without incessant vigilance and indomitable perseverance. It was only after a struggle of thirty years that the successors of Napier and Dyas emerged triumphant.

Long before that, Dyas had wrecked a fine constitution by persistent overwork. Even when illness became acute, he refused to apply for leave ; and he suffered much with incredible patience.

In 1868 he died, worn out, at the early age of forty-four. He was buried at Delhi next to the grave of his admired school comrade, John Nicholson—his task achieved, his dearest wish fulfilled.

After his death Lord Napier wrote, ' I have rarely met his equal in engineering talent and invention : never his superior in devotion to duty and to the profession he loved. I believe he fell a sacrifice to that devotion.'

And the President of Thomason College added his own estimate of the man. ' Guileless and single-minded, he

never spoke ill of others or judged an action harshly. Such men should not pass unheeded from among us.'

That Colonel Dyas did not so pass the Punjab testifies even to this day. Like Napier, he left the imprint of his genius all over the Province, in vast canal schemes that were to become its ultimate salvation and glory.

Thus, what the soldier began, the irrigation engineer continued ; and the once aggressive Sikhs became so attached to their fertile soil that many of them heartily approved the profitable change-over to ploughshare from sword. Their former rulers had built them no canals, no bridges ; only a succession of forts that may still be seen from shady groves along peaceful canal banks. Gone are the terrors and excitements of plunder and foray, followed by night attacks of ruthless reprisal. Instead, a company of Indian troops under one white officer may stand for the whole military force of a district.

Not without loss of life, even among non-combatants, has the aspect and spirit of a warlike country been so transformed within a generation. Many a fine young Englishman has succumbed to the fierce climate and the privations of pioneering work so that the *ryots* might not starve. Their resting-places, in lonely corners, are marked by a simple headstone ; their passing, by a few lines in an official gazette—their only visible reward.

Mr Deakin—whom I have quoted more than once—has left a detailed impression of the Ravi River and its head-works as they were, in the cold weather of 1890-91.

The Executive Engineer of the whole district was then Mr John Benton, whose engineering genius ultimately lifted him to the top of his profession.

With him Deakin travelled from Amritsar to the head of the river ; and he has vividly described his first experience of the Indian rest-house in those comparatively primitive days. He shows Benton, the engineer, at his daily work of supervising canal affairs, seated at his little table, his penetrating eyes fixed on the group of attendant Punjabis, each with his petition or complaint to be settled out of hand.

At another time he would be pacing the canal path with his little troop of followers—ever plausible, ever undecipherable—trotting at his heels.

Fascinated and impressed by 'that great human achievement,' Deakin has feelingly described the scene near Madhopur headworks at sunset.

'A precipitous cliff overlooked the long spread of the valley and the winding steel-blue river fretted with foam, tinged here and there with salmon-pink from the glowing sky. Light ebbed from the forest-clad hills; shadowy groups of labourers drifted homeward. A purplish mist rose through pale shingle and yellow grass to a grove of eucalyptus, whose grey-green tips caught the last of the light.' An angel's wing of mottled cloud veiled the blue, above a sulphurous sweep of tawny gold that burned to incandescent crimson where the sun had vanished, like an open forge seen in darkness. A far vision of snow-peaks and glaciers glowed with a reflected radiance, till all light faded and they gleamed ghostly above the brooding darkness of earth.

If at times the engineer has to pull through many trials and surmount stubborn obstacles, he has the privilege of living close to Nature in her most gracious and most terrible moods. In conquering the wild Ravi, pacifying the Sikhs and creating the canal system known as Upper Bari Doāb, Colonel Dyas and his fellows had the honour of achieving the first British canal system in the Punjab—a forecast of greater things to be; a standing proof that the much criticised British Government, on gaining control of the Punjab, at once took steps to improve the whole conditions of the Province and its people.

The year 1869 saw the launching of a second great project—the Sirhind Canal to draw off water from the Sutlej and vivify a large area between that river and the Jumna (see map). The scheme—involving a big drain on capital—had been outlined originally by the brilliant Dyas himself; but, as means and funds were inadequate, nothing was done for twenty years, when several Sikh Princes—recognising the benefit to their States—pressed for its

inception; and Patiāla, being the wealthiest of these, proposed to bear the expense of survey and preparations under qualified British officers. The design was daring. Its feasibility doubtful. Heavy cost a certainty. The canal would have to be carried across two gigantic torrent beds draining a mountain area as large as Yorkshire, with twice its rainfall. Forests and quarries and buried cities must be ransacked for material, also a temporary railway laid down. So again the actual start was deferred till 1874; and, after eight years of hard labour, it was opened by Lord Ripon in 1882.

So long-drawn-out are all such complex operations, that canal builders are apt to think in terms of decades rather than years, and even decades are but as yesterday in timeless India.

On this occasion the work had to be done under peculiarly difficult conditions. All the stone required had to come from fourteen miles away; all timber from many hundred miles. The few indispensable white officers had to seek their own raw materials, make their own kilns and bricks, burn their own lime, build and work their own railways, train their artisans and supervise all work done down to the minutest details, while their minds must grasp the shape of the whole colossal plan—designed and built from first to last by military engineers.

This majestic work also was visited by Deakin from end to end, in that same cold weather of 1890-91.

‘Every four or five miles,’ he writes, ‘we pass under bridges of sandstone, across which the country traffic is leisurely drifting. . . . Our human towing team shifts, but never flags. . . . Like a living organism, the great stream of water constantly alters its environment and is altered by it; so that the engineer’s work is never done.’

The climax of this fine canal is the great super-passage at Budki, where the combined waters of two mountain torrents are lifted right over the canal by means of a bridge four hundred feet wide, ‘beside which the bridges of London and Paris seem insignificant. It can only compare with colossal works of antiquity outside Egypt.’

'When it is remembered,' adds Deakin, 'that tens of thousands of tons of water are hurled across that superpassage, at high velocity, it is amazing that any work of human hands should be able to sustain the onset. . . . Unless one were an eyewitness of the ravages that a river is capable of making, these would seem incredible in their display of incalculable strength. . . . So sudden is the onslaught, so subtle the direction of its mighty forces that one may almost credit the native stories that endow it with a demon intelligence.'

The people themselves, peasant or coolie, even while they benefit from the madness of the English—pitting their puny strength against the gods of mountain and stream—are more often moved to wonder than admiration at the Sahib's inexhaustible energy, his pursuit of work for work's sake, day after day, unrelieved by any form of *tamāsha*, religious or domestic; for ever striding here and there and everywhere, persistently trying to do to-day what might just as well be done to-morrow, or even not at all, devoid of faith and leaving nothing, even to their own Providence, except what they themselves were powerless to control.

The handsome headworks of the Sirhind Canal—where the river emerges from the Siwalik Hills under Simla—are set in an even wilder scene than those of the Ravi. From the spire-like peak named Temple Point, the Sutlej curves down two main channels round an island of sand and boulders, past cliffs fantastically carved into the weirdest shapes by mountain torrents hurrying down from bleak heights into the river below. There are scenes that reveal Nature in an almost inimical mood even towards her own sublime handiwork. These grotesque distortions of many-hued cliffs have almost an air of malign and purposeful disfigurement wreaked on a desolate patch of wild . . . 'so bare and blighted are the ravines that border the river . . . not a bird, not a tree, not a curl of smoke betrays the presence of life. . . .

'But in a few months' time there will no longer be this empty valley, this quietness of air. . . . The great reef will then be hid in foam. The flood-tides hoarsely roaring will sweep down half a mile wide—tossing its tangle of trees,

grinding boulders against the stubborn mass of stone and iron that will bar its way. In that season of over-abundance, as in drought, the works will fulfil their duty to the far-off thirsty plains. The engineers will stand to their posts and flinch from no contest with flood or fever, or the river that they master to prevent the ruin that must follow if its great forces should overmaster them.'

From these just eulogies of gifted men in a hard-worked profession, it must not be inferred that all engineers are paragons among their kind. Every fine profession has its percentage of 'foot-sloggers,' or of men prone to work with one eye on the elusive medal; but these in no way detract from the prevailing spirit of the service. In the P.W.D. medals are few and the work—as I have shown—relentlessly hard. But in earlier times, if conditions were often of the roughest, there were compensations on reaching the higher rungs of the official ladder.

Those were the days when the Chief Engineer of a district would set out on a cold-weather tour with his train of seventy camels and horses, to find awaiting him, at the end of his day's march, a camp that looked more like a settlement: streets of tents comfortably furnished for all purposes—office work, dining and sleeping; tents for his assistants and servants in all grades.

Next morning—office and interviews ended—he would be ready for the next march. His vanished city of tents would be stowed away on the backs of camels—a long line of bulky bodies and disjointed, spindly legs that shuffled along in a cloud of dust like 'slippered pantaloons.'

The Chief and his party, riding on to their next halt, would find that vanished city re-created in facsimile; every tent in the same position and order, even to such trivial details as the same small items or scraps of paper, arranged exactly as they had been left on the carpet that morning, so meticulous is the Indian's attention to detail. It was as if some magician had waved his wand with a 'Be ye removed'; and the whole standing camp had been whirled, intact, through the air.

Those picnic journeys, perfectly planned and carried out,

were among the brightest spots of the year's round of duties.

But if Chiefs and Heads of Departments, in those more spacious days, did live and move with a measure of pomp and circumstance that evoked Kipling's 'little tin gods,' India herself must, in common honesty, admit that under them she has experienced a form of control 'more sympathetic and wise than that of many monarchs over subjects of their own kin.'

For conclusion, here is a rough jingle of verses, written by some cheerful junior officer in the P.W.D. : verses that have at least the merit of expressing, in casual British fashion, the spirit of the Service that gave them utterance :—

SONG OF THE P.W.D.

*' In ancient days, when we were young and life was full of bliss,
We never thought to advertise—at least, not quite like this.
We worked for the old ryot, and the honest cultivator ;
And didn't give a thought to the political p'rambulator.
We didn't ask for medals, for bonus or for laces.
We didn't get them anyway, so had to save our faces.*

*' We turned the blazing desert into squidgy, squadgy fields,
And included the mosquito in our unexpected yields. . . .
We spent weary nights in bullock-carts, we rode on in the heat.
We cursed the beastly climate, but we never knew defeat.
We wondered why we came here ; we said " What a fool I am ! "
We began with lurid language—and we'll finish with a DAM ! '*

3

THE PUNJAB TRANSFORMED

'I venture to affirm that the main characteristic of British men . . . is not so much the spirit of adventure as the spirit of service ; though the British man has always liked his service to be adventurous.'—JOSEPH CONRAD.

The story of the Punjab Canal Colonies—now to be unfolded—reveals the most astonishing and beneficent of all Government activities in the annals of British India ; and the first chapter of that story may be said to have opened with the completion of the Sirhind Canal, which had brought to life countless acres of sparsely inhabited desert country. Its wandering tribes, known as Junglis,¹ made no attempt to till the soil. They preferred their unsettled way of life with herds of buffaloes, camels and goats, eking out a precarious existence independent of any regular diet. Moslems all, of a physically fine type—their women uncommonly strong and graceful—they resented outside interference ; and it seemed they would neither colonise themselves, nor allow others to do so.

In that respect, a twofold problem confronted the Punjab Government. Here was an ideal canal Province crying out for even greater schemes : many million acres of waste crown land between its rivers. Here also was abundance of toil-inured peasantry in its over-peopled areas, could they only be persuaded to leave their familiar congested town for a strange harsh land that might or might not be converted into 'a new heaven and a new earth.'

So unusual an adventure, demanding risk, energy and initiative, seemed scarcely congenial to the Indian temperament ; and the first attempts were made in a region so unattractive that most of the would-be colonists came, saw—and departed, preferring their familiar crowded villages.

¹ Jungle folk.

Many refused to believe that land so unkempt could be worth the cost and trouble of cultivating. Nor did they relish the hard labour of clearing jungle scrub without tools or machinery; digging their own water channels and building their own shelters. But after them came bolder spirits, prepared to make the best of an unpromising prospect; and these reaped a well-deserved reward.

Their very first crops astonished none more than themselves. Others came out to see, to envy and, in some cases, to emulate; undeterred by perpetual clashes with hostile Junglis. If their lot was hard, it was not unprofitable. The surprising fertility of ground unused for centuries encouraged industry and enterprise, both essential to the ambitious attempt at reclaiming the Rechna Doāb—or Great Desert—between two rivers, the Chenāb and the Ravi beyond Lahore.

The ultimate success of that bold venture stamps it as a monument to British persistence; so inauspicious were the beginnings and early vicissitudes. More than once the whole thing seemed doomed to ignominious failure.

Not until 1890 was an enlarged scheme accepted and put in charge of Colonel Sydney Jacob, R.E., the greatest canal enthusiast of his time. His name—like that of Sir John Ottley—is still gratefully remembered wherever he worked in the Punjab. Both actively promoted the success of that incomparable project: Ottley by insisting on a perennial canal, in the teeth of official assurance that he might as well cry for the moon; Jacob by at once perceiving the necessity for a far larger scheme that would involve extensive survey of the whole inimical desert region. The difficulties were admittedly enormous. Many sapient seniors were sceptical of the outcome. But Jacob was not to be discouraged by men of little faith. His mind's eye was always on the end in view. He took even dismaying difficulties in his stride, foreseeing them and combating them as they rose up to confound him.

Through a dead wilderness, where only snakes and lizards darted from under the thorny scrub, he and his staff thrust the Lower Chenāb Canal, undismayed by the knowledge that Government expectations did not run high. The

immensity of their task may be gauged from the fact that the great plain of the Punjab equals in size France, Austria, Hungary, Germany and Italy put together; that the main canal was to flow through four hundred and twenty-seven miles of utter desolation with over 2000 miles of lesser channels to water the fields of colonists-to-be: the human goal of their bold adventure.

They were fortunate in that the importance of the scheme was actively realised by the Lieut.-Governor of the Punjab, Sir James Lyall. His wide sympathies and deep knowledge of the Province made him palpably the right man in the right place for an undertaking that proved to be 'a turning-point in the economic history of the Punjab.'

Through its first critical years the colony was ably piloted by his brilliant successor, Sir Denis Fitzpatrick, and by the zeal, ability and tact of the first Colonising Officers, well chosen men, humanly qualified for the kind of work that cuts deepest into the life of the country—work done, neither through office nor files, but face to face with the people. Shrewd judges of character they needs must be, yet open-minded and responsive to unforeseeable points of view; as when a zealous young officer, after giving much time and thought to making the ground-plan of a village, found himself assailed by a crowd of protesting peasants.

None of them, they declared, could possibly live in a village so designed. The Sahib had arranged too many houses facing east; and only a very simple person could not know of the malicious demon who dwelt in the East. If doors and windows opened that way, he would enter in each morning and give them endless trouble. So all must be designed afresh, with blank walls facing the dawn: the last thing that any Western dweller would wish.

Time lost is of no account in Eastern eyes; and only the man on the spot knows how complex, how never-ending is the work to be done in India.

But long before the designing of villages came the distribution of allotment squares—twenty-seven acres of untilled, and seemingly untillable, soil in the midst of desolation: no roads, no railways, no easy communication

with their kind, all conducive to the peculiar loneliness of men accustomed to live in crowds. It needed grit and character for whole families to leave their familiar homes, to trek through the unknown Jungle Bhar (or Great Desert), to face dangers equally unknown, from wolves, wild cats and the terrific wild boar, from hostile nomads, who could waylay or rob and murder them at will.

Many who bravely risked their all never even reached the supposed Eldorado ; and those who did so must have viewed with sinking hearts the unkempt squares of their Promised (yet unpromising) Land. Small wonder that many departed, in mingled disappointment and relief. The real wonder was that any had the courage to remain and face the struggle with opposing factors that is the lot of all pioneers.

Their land must be cleared, levelled and embanked. They must dig their own water-channels in which water, at first, often refused to run, so that no seed could be sown. They must contend with hostile activities of nomads, who hindered them assiduously, and could not be bribed out of their inimical spirit even by offers of land from distracted British officers, who had not realised in advance either their numbers or their resolute opposition.

Throughout those early years, while the great canal system was still a-building, ups and downs were many, progress often lamentably slow and full of anxiety. In one year a heavy monsoon laid the whole community low with malaria. In another year, monsoon failure and famine elsewhere brought refugees from the stricken area crowding to the headworks that were, after all, completed in the record time of three years : a triumph largely due to the untiring energy of Colonel Sydney Jacob, aptly christened by the workers ' Father of the Lower Chenāb Canal.'

It need hardly be said that the new colony could not escape the inescapable scourge of cholera. In their very first year it crossed the Frontier and travelled down the Punjab in its mysterious come-and-go fashion, spreading terror among the settlers, who fled back to their villages, in complete disregard of the fact that thus they carried the dread disease to their own people.

Eventually, those who survived returned to find no fields but long grass and flourishing jungle, the outcome of an abnormal monsoon. Tempted to camp under the shade of trees, they were exposed to the death-dealing poison of the mosquito, at that time undiscovered by science, and fell victims to a virulent form of malaria hardly distinguishable from cholera.

Sir Thomas Ward, C.I.E., M.V.O.—late Chief Engineer of Irrigation for all India—was then a young man, working on the canal water supply, and he vividly recalls the pathos of that further discouragement to folk who so easily lost heart and hope.

‘One village comes to my memory, colonised by 40,000 stalwart Sikhs; and the next week only their ashes remained. Riding through another village, I beheld the gaunt figure of an old woman, beating her breasts and flinging out her arms towards a wealth of standing crops. “*Hai-hai!*” she wailed, “all my menfolk are dead. I alone remain to harvest these fields.”’

Two pictures out of scores that can only be conjured up by those who know something of India, where splendours and disasters are all on the grand scale.

That year the embryo colony was in the trough of a wave; but those who persevered reaped their due reward. The fertility of that virgin soil proved an amazement to all beholders. News of the marvel spread fast and far. More settlers and yet more came flocking out to replace the faint hearts who had despaired and departed. Penniless colonists, enriched by a couple of harvests, became men of substance, hampered only by want of roads and railways for transport of their potential wealth to distant markets. Even success brought its own problems. Those abundant fields could not harvest themselves; and labour was scarce in the wilds. Whole trees laden with precious cotton had to remain unpicked.

Again it was engineers to the rescue, since they alone could provide roads and railways to complete the new world that signally fulfilled its aim of helping the peasant to help himself. Here was no pauperising, no dole, but responsible ownership

to stimulate interest and energy ; a future to work for ; the shifting of economics into its proper place ; no end in itself, but a means to a larger end—the invigoration of character and enterprise, happiness in its healthiest form.

The whole system of canal colonies—a noble experiment, human and material—did in truth bring new hopes and purpose in life to thousands, if not millions of people, who might otherwise have died in debt, leaving no other heritage to their sons.

The completed Chenāb Canal was veritably little less than a river in the desert, bringing to birth harvests undreamed of in the peasants' wildest imaginings. News of those bumper harvests electrified the Province and awakened the natural land hunger of man. No seeking for settlers now ; appeals for allotments very soon exceeded the numbers then available. It became a case of picking and choosing the most likely colonists out of the crowds that poured in from all quarters : old and young, genuine cultivators and mere loafers ; whole families expecting and demanding a share in that potential wealth, ignoring the fact that they themselves must be physically and mentally capable of creating their own paradise-to-be.

The task of picking and choosing was no light one for the Civil Officers, who knew that all hope of success and stability depended on installing the right types in the right proportion—peasant, yeoman and landholder, with a view to building up villages that should be 'superior in comfort and civilisation to any that had previously existed in the Punjab.' How that aim was fulfilled may be gathered from the testimony of an Indian, Deva Singh, M.A. Writing of the Chenāb experiment in 1929, he states that the 'culture, thought and civilisation among the colonists are decidedly more advanced than among their brethren elsewhere.' Land-ownership, apart from profit, is rightly a matter of prestige in the Punjab. It has, in fact, made the peasant-proprietor the backbone of the Colonies, as he is of the whole Province.

In time, even the hostile nomads were impressed by the transformation wrought under their eyes. Finding the settlers more than a match for them, their criminal ardour

was cooled, their acquisitive instinct aroused. Allotments offered on liberal terms drew them gradually into the fold, where they proved adaptable and successful beyond all expectation: a signal triumph of environment over heredity. Surprisingly soon they shed their lawless ways, learnt readily from their neighbours, and became in time the best self-cultivators in that model colony.

'The reclamation of that class,' wrote Deva Singh, 'is an administrative achievement of the first magnitude.' Very few outside the Province have any clear conception of that achievement, or of the part played in it by those guiding spirits, the British Colonising Officers on the spot and the Settlement Officers in the congested areas.

On the last fell the initial responsibility of judging and choosing the pick of those who came crowding to the Settlement Office primed with every conceivable scheme to gain a twenty-seven acre square of land: many among them dotards or mere boys, or families whose lands were mortgaged, and they wholly unfit for responsible ownership. The business of dividing the sheep from the goats demanded much local knowledge, judgment, tact, infinite patience and a sustaining sense of humour.

The hopeful aspirants, all squatting on their haunches, would be ranged in groups, fathers with sons and brothers; authority having decided to allocate squares in parties, to avoid any sense of isolation. Thus the newly arrived settler would find himself one of a group, including relatives and friends from his own district: a wise provision that went far to ensure the rapid success of the venture.

Down the long line of squatters went the Settlement Officer, asking shrewd questions, weeding out the physically unfit amid protests and lamentations. To these the kindly officer must explain, with due tact, that the coveted squares were not delectable morsels to be handed out like food to the hungry; that they could only be entrusted to men who would live hard and work hard till the earth yielded her increase.

A Settlement Officer of much early experience writes, 'I spared no pains in personally explaining to the people Govern-

ment's object in giving the land. Even fifteen minutes of such talk will have a far better effect than any number of printed pamphlets, probably left unread. It was also important to dwell on the prospect of hardship and difficulties that would serve to deter the half-hearted, who were unlikely to make a success of their land.'

Then, the favoured ones would pass on to the Colonising Officer and his staff—unsung heroes, mainly responsible for making the Lower Chenāb Colony the largest and most successful of its kind in India, perhaps in the world.

The whole process of dividing the spoil was eased by Indian faith in the impartial fair dealing of the Sahib: no favouritism, no backstairs influence, as there would certainly be with one of their own people in charge.

Among those who were drawn to the new land came a number of Indian Christians. Taking service at first with Hindus or Moslems, they eventually earned enough money to people two entire Christian villages chiefly composed of the Depressed Classes, who are more readily converted, because the white man's religion offers them a rise in status. For this reason the word Christian tends to imply a man of low caste or no caste: a fact amusingly illustrated by a Canal Officer, when working in Egypt among rabidly anti-Christian Arabs. Riding past a group of Arabs and Indians, at work together, he heard the Arab spit out scornfully, 'There goes one of those Christian dogs.' To which the Indian promptly replied, 'That man is not a *Christian*. He is an Englishman.'

By 1900, the Christians of Lower Chenāb had worked themselves more or less clear of the *bunnia*'s clutches and peopled several prosperous villages—Presbyterian, Roman Catholic and Salvation Army, supervised by their own clergy or commandants. Former Moslems, Hindus and Sikhs, happily settled on prosperous tracts of land, were raising crops that became the envy of dwellers elsewhere.

It is worth noting that officers in charge of all settlement works took pains to instil the value, moral and material, of working together towards one end; of treating agriculture as no mere industry, but a way of life that carries its own

reward ; that needs no bolstering up by offers of extra land or any form of the prize-giving element that vitiates too much of Western education and life.

Here was an unrivalled opportunity for progress on the right lines, given ample staffs to guide and stimulate and enlighten the villagers in their charge. Unfortunately most colonies from the first were under-staffed : a false economy from the lowest point of view. From the higher aspect it was less than fair to colonists, who were themselves not the least surprising element in the whole transformation scene, being mostly men of the peasant caste, whose forbears had for centuries tilled the fields of the Punjab.

The centre was peopled with Jāt Sikhs, most desirable of settlers, owing to their capacity for patient toil, their sturdy independence and spirit of enterprise. Their failings—love of money and crimes of violence—were, on the whole, offset by better qualities and their readiness to interest themselves in the general welfare of the colony. Even the nomads, no longer obstructive, were influenced for good by the 'magic right of property,' with its character-forming responsibilities. In this connection, it is thought-provoking to note that while private ownership is being attacked in England, its value has been recognised in India to the extent of actually restricting the evil of over-much State control.

In the case of the Chenāb Colonies, control was personal, a form that has never failed of success in India—given the right men ; and those early settlers were peculiarly fortunate in the first Colonising Officers chosen by a Lieut.-Governor whose active and sympathetic interest had been a valuable asset throughout. The name of Sir James Lyall has become permanently linked with the Lower Chenāb Colony, that called its first and capital town Lyallpur. In the words of Sir Michael O'Dwyer—a later famous Governor—'his kindness of heart, his courtesy, his deep knowledge of and sympathy with the Punjab and its people, have made his name honoured and cherished throughout the Province ; have ranked him among those whom India does not forget.' With characteristic and attractive symbolism the centre of

Lyall's Town was designed in the form of a Union Jack, exactly as Lord Kitchener designed Khartoum.

A Lieut.-Governor so responsive to the people and their needs would naturally choose the right Colonising Officers for an undertaking so largely dependent on wise personal leadership. The first of these was Mr Edward Maclagan, I.C.S., son of a distinguished father, General Robert Maclagan, who had been for twenty years Chief Irrigation Officer of the Punjab: a fine soldier and engineer and an equally fine man. His charm and beauty of character impressed all who came to know him well either in his work or in his home life. His son, a brilliant young civilian, more than fulfilled his early promise, crowning his career as Governor of the Punjab. But he was not allowed to remain long in an arduous, if interesting, post; and his successor, Captain Popham Young, was a soldier-civilian—palpably the right peg in the right hole, christened by the people 'Father of the Chenāb Colony,' that owed much of its permanent prosperity to his gifts and unstinted service.

In him were combined all the essential qualities of a first-rate Colonising Officer—untiring energy, patience, tact and a peculiarly sympathetic understanding of the people. Happily for them, he was also given time—the supreme asset—to grapple with local problems and become a personal friend of the settlers, who were not only making new homes, but founding a community of prosperous citizens.

Above all, he arrived at convincing them that the land was being justly distributed, not in a mere spirit of philanthropy, but in view of starting with the best men, so that their successors might encourage others to make the same venture. Everybody concerned had the welfare of the whole colony at heart; none more so than Captain Young, who ensured it by engendering a spirit of co-operation between himself and the settlers and the large staff of engineers responsible for distributing water. In that respect, it was one of the happiest adventures ever made in India.

For eight years Captain Young worked indefatigably, won the complete confidence of the people and immortalised himself as the first practical coloniser in India. During the

difficult crises that arose from time to time, he proved invaluable; always in sympathy with the people—their ambitions, their bewilderments and astonishing successes. As Chief Colonising Officer he was bound, at best, to be an overdriven man. More than any of them, he required freedom from petty problems, leisure to look round and think ahead for the good of his small kingdom. Especially he needed a strong and competent staff to keep the colony in working order; yet, throughout, he was kept continually short-handed, a condition that increased the strain on himself and his fellows. Men so placed—making things or handling whole communities—may often find life hard; but it is the kind of hardness that begets a 'simplicity of joy in plain things' unknown to the surface pleasure-seeker, who probably pities their lot.

'In a scheme like this'—again I quote Sir Michael O'Dwyer—'the services of engineers stand out pre-eminently. But the work of Colonisation Officers, who have the delicate task of settling colonists from all parts of the Punjab . . . helping them over their initial difficulties, designing whole systems of towns, roads, markets, schools, hospitals, is no less arduous and valuable.' Foremost among these stands Major Popham Young, whose personal gifts were more essential to the success of a great human undertaking than even the highest forms of technical skill. None is quicker than the Indian to mark the difference between the man whose work is an end in itself and the one who uses it simply as a means to one end—his own advancement. It was the first of these that the colonists liked to have in charge of running water, or for the settling of constant disputes among themselves over the precious fluid.

The Chenāb Colony was fortunate in having many such officers, from Sir John Ottley and Colonel Jacob onward; and the whole vast area—villages, towns, markets—flourished accordingly. Major Popham Young, during his eight years, saw the entire Rechna Doāb (or Great Desert) reclaimed; saw a new country peopled with a new population over an area equalling the cultivated area of Egypt. Actually British Administrators and engineers between them achieved,

in a few decades, a transformation such as Egypt only brought to pass in the space of several thousand years. In fact, the work done by these officers—especially at the start—was of a nature such as few outsiders could possibly assess or apprehend.

Major Popham Young was fortunate in being given those eight formative years of the colony, and in living on afterwards to see it become a flourishing district with eight market towns, exporting some 300,000 tons of wheat a year; railways, and schools and hospitals; a church, and club for British officials; a community in every way the most progressive in the Punjab. He has left full reports of his remarkable work: official reports, hidden in official records. Outside these, there exists no written trace of all that he achieved. But if he has remained unsung among his own people, the Punjabis whom he served so well have enshrined his name in local ballads of thanksgiving that were (and probably still are) recited or sung in praise of their flourishing land and the man who first brought it to life.

One ballad in particular, by a blind Punjabi poet, still remained popular thirty years after it was written.

Here are a few of its many verses: mere doggerel in clumsy translation, but probably having, in the vernacular, some verbal rhythm or lilt of its own:—

*' First I will praise the true Lord,
I will tell a new tale to-day.
How of old the Bhar was the prey of thieves,
The shelter of deer, jackals and rats.
Now no barren jungle is left :
Young Sahib has peopled the land.

Behold the unity of the English,
Their promise is true, their word is stable.
There, at Wazirabad,
Where the whirlpools churn,
A weir has been made and the river dammed :
Young Sahib has peopled the land.

Most mighty heroes are the English,
Who have now turned aside the river,
They digged a canal straight as an arrow
And planted groves on its banks.
Young Sahib has peopled the land.*

*Hear you the tale of Lyallpur,
Where grain and water abound.
Beside its gateway runs the canal ;
Trees have been planted in rows
And grass comes sprouting up—
Young Sahib has peopled the land.'*

The last, though it sounds a tall order, is no overstatement, since a decade of prosperity raised a population of 80,000 to 800,000: an increase that has continued; and may, or may not, be to India's true advantage.

The new district, with its increasing export trade, very soon made the Colonies known throughout the commercial world. Many others followed the Chenāb success; many were already in process of construction. Each of the five rivers eventually had its upper and lower canal system; but for lack of space—and the inevitable repetition involved—their stories cannot be told in full.

The tale of the great Chenāb experiment may be rounded off by a brief account of an interesting ceremony, in December 1916, when the Punjab Governor, Sir Michael O'Dwyer, opened a memorial fountain to commemorate the invaluable work done by the makers of Lyallpur.

It was Sir James Lyall himself, in distant England, who was happily inspired to present his own town with a drinking fountain, for the convenience of the people, in memory of Sir John Ottley and his fellows. Built of Gwalior stone, on simple classic lines, it stood outside the Kaiserī Gate, in a pillared pavilion paved and fitted with seats, where the traveller could rest while quenching his thirst—water being the symbol of life renewed. On the fountain itself appeared the names of unforgetten benefactors headed by that of Sir John Ottley; and beneath the inscription a text from Isaiah, who might almost be called the Prophet of Irrigation: 'Then shall the lame man leap as the hart and the tongue of the dumb shall sing: for in the wilderness water shall break out and streams in the desert.' Above it, a group of five dolphins at play symbolised the five rivers of the Punjab.

Unfortunately the happy occasion was shadowed by

news of Sir James Lyall's sudden death in England: news that genuinely saddened those who had assembled to do him honour and to send him messages of grateful remembrance coupled with pride that one of his last public acts should have been the designing of this welcome gift for the people of Lyallpur. Sir Michael, himself a former Settlement Officer appointed by Lyall, had personal recollections of those early difficult days, when the canal and its colony grew up almost side by side. In an eloquent speech he recalled how the first branches of the canal were opened in 1892 under the ægis of Sir James, to whom they all owed an unpayable debt.

Among the many British officers and civilians worthy of mention, only a few could be singled out. To the honoured name of Sir John Ottley the speaker added those of two brilliant engineers, Sir John Benton and Sir Lionel Jacob—of whom there is more to be told. He regretted the absence of Mr Ward (now Sir Thomas Ward, C.I.E., M.V.O.), whose talent and industry were invaluable in coping with early difficulties. For two years his services had been lent to the Siam Government; but in 1915 he had returned to his original Province as Chief Engineer and Secretary for Irrigation. At this time he was devoting his last few weeks in the Punjab to working out the Sind Sagar Canal project from the Indus at Khalabagh, that was one day to prove itself the most stupendous thing of its kind in India or elsewhere.

Absent also, with sincere regret, was Colonel Popham Young—the 'Father of the Colony'—now Commissioner of Rawal Pindi, where he had distinguished himself by his effective manner of handling troublesome elements that had flared up since the outbreak of war in 1914. It was thus that he earned his knighthood, doubly deserved for valuable services, early and late.

In connection with these first great works, I must once more quote Mr Deakin, on whom the whole scheme of Indian irrigation—even in 1892—made so deep an impression that he urged the writing of a book, by some competent author, giving a 'succinct history of each scheme, explaining all its failure and success': a need that has been partially fulfilled

by Lieut.-Colonel Sandes, R.E., in his two fine volumes, *Military Engineering in India*.

But there exists no complete record of India's most distinguished Civil Engineers, responsible for more recent and more tremendous schemes from the Chenāb Colony onwards. In one volume and another their work has been described, but their lives have not been written as they deserved to be. Their memory lives, as they would wish, in the superb works that they have bequeathed to India for all time.

None the less there is justice in Mr Deakin's plea that 'such a book, if complete, would be a memorial of the greatest value to other colonies; that it would at the same time offer to the outer world the best justification for British supremacy in India; the best evidence, from facts and actions, of the large-minded generosity of British rule.'

4

THREE GREAT ENGINEERS: A FEW
OF THEIR WORKS

*'What shall I say of the deeds I have dared and the deeds I have
done? . . .*

*What have I wrought with my hands that the world may behold
and revere? . . .*

*Is it nought to have given my soul, nor asked the reason why?
Is it nought?—God knows.'*

—GERALD GOULD.

It has been said that there are many engineers of high quality in India, but very few great ones which may or may not be truer than most generalisations. The fact remains that we have already discovered, in the Punjab alone, a few stars of the first magnitude—Lord Napier, Sir Alex. Taylor and General Sir James Brown. The generations that followed them have given India many notable engineers; and among them two names may be said to shine with an almost equal lustre: those of Sir John Benton, K.C.I.E., and Sir Lionel Jacob, K.C.S.I.

Of the last, it was written, at the time of his death in 1934, 'The name of Sir Lionel Jacob stands out in gigantic letters, as one who has done great things for India in his sphere of service, probably more than any who came before or after him.' He was a younger brother of the famed Colonel Sydney Jacob; both brothers curiously choosing the same Service, one as a soldier, the other as a civilian. They were a devoted pair, and it is hard to say which was the more gifted of the two.

A soldier who knew Colonel Jacob said of him, 'Only making canals in India? That is the worst of Sappers. Jacob could have achieved anything.'

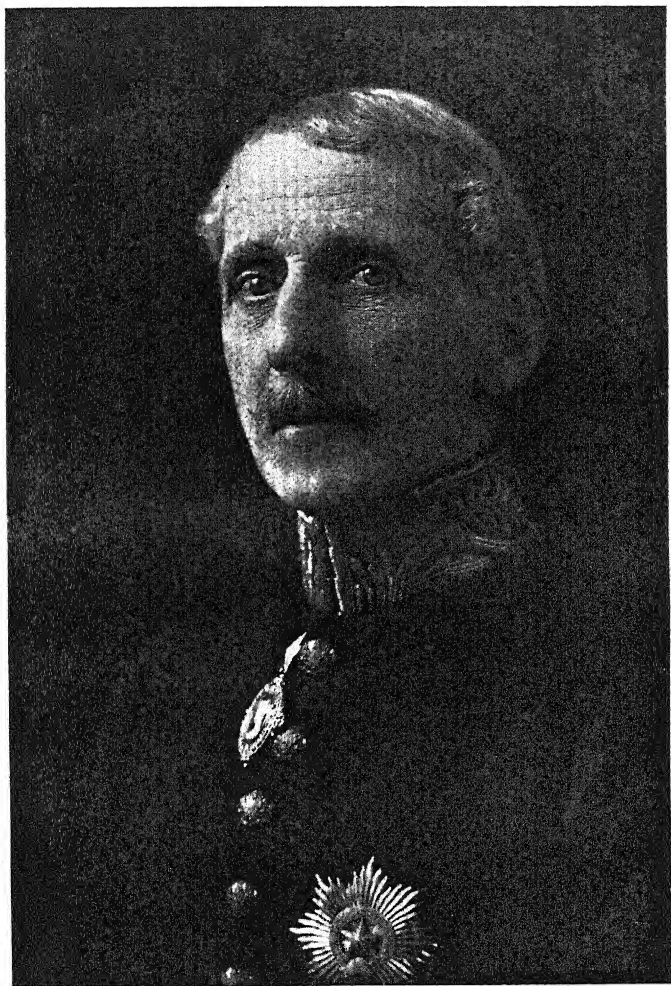
Did the speaker consider what it meant to have achieved,

among other important works, the Lower Swat¹ Canal—to be described in this chapter—and the Lower Chenāb Canal, unrivalled of its kind? Few politicians, or even statesmen, have more lasting achievements to their credit. Colonel Jacob's name may be unknown in England; but it will remain known in India, so long as his works endure.

Sir Lionel, as a young man, was associated with many large Punjab projects for more than twenty years. He was then, for a time, transferred to Burma, returning later to the Punjab as Secretary of the P.W.D. to the Government of India; and Lord Curzon set a high value on his rare combination of technical skill and grasp of detail, with a clear and fluent gift of expression. Benton possessed the same unusual blend of talents, both being forceful writers and popular administrators. There was, in fact, an odd similarity between the careers of these two strikingly dissimilar personalities. Both were born about the same time; both chose the same profession and came to India in the same year. Both were foremost among the pioneers who made the Punjab, proving their quality in early work on the Bari Doāb and Sirhind Canals. Both later served for a time in Burma; and both reached the highest rung of the official ladder: Benton as Inspector-General of Irrigation in India, Jacob as Secretary to Government for the Public Works Department.

There the resemblance ends. Benton was a Scot from Aberdeen, with a singularly magnetic personality and an insatiable appetite for work; Jacob was a man of Kent dowered with good looks and charm, many-sided in his interests and gifts. Primarily, an expert in every branch of engineering, he was recognised as that rarity a man who excelled equally in thought or action. 'Essentially a good companion, his gaiety, wit and gift of expression were a joy to all who had the privilege of knowing him.' One such, in summing him up, writes, 'Here was no duteous knee-crooking knave, no yes-man, trimming his principles to opportunist winds. . . . In the foreground one has the picture of an ascetic and intellectual face; in the background some

¹ Pronounce Swot.



Sir Lionel Jacob, K.C.S.I.



Sir Thomas Ward, C.I.E., M.V.O., as a young man.

twenty million acres of desert sand and prairies, changing through the years into green and yellow farmland—sugar-cane, cotton, mustard, maize and wheat. . . . Against such a background it can be truly said of Sir Lionel Jacob that he nobly lived up to his motto, "*Non nobis solum.*"

Both men were rising young engineers in the 'seventies, when irrigation had at last become recognised as one of the most important services in the country.

Jacob, with his elder brother Sydney, shared in the making of the Lower Swat Canal on the North-West Frontier, a region that looked utterly unpromising for any work of that kind, both as to the land and the people. For in the valley, south of the Malakand Range and north-east of Peshawar, dwelt the non-fanatical tribe of Yusufzais; and beyond them the Swatis, whose country reached the extreme limit of British India. Across the Border, eastward, were Mohmunds, restless and hostile: raiders and cattle-lifters, like most Pathans. To thinking men it seemed clear that a canal through the Swat Valley, reclaiming its waste places, might more effectively pacify these tribes than the irritant of costly punitive expeditions. It had been a recurrent idea since it first occurred to Sir Henry Lawrence, when the Border was too primitive and too far from the Punjab.

In '75 it looked more feasible than in '49; though physical obstructions would still be tremendous and the tribes actively hostile. None the less, after years of surveying and planning and calculating cost, the risky venture was decided on in 1876: the only canal ever undertaken from a political motive, with small expectation of profit to Government.

The project was wisely assigned to the best engineer of his time, Colonel Sydney Jacob; and was carried through under the greatest difficulties imaginable. In view of tribal hostility, work had to be virtually carried on at pistol-point, in order to combat raids from beyond the Border and active opposition in the Swat Valley itself. Imported labour would simply be an invitation to murder; yet few Pathans would condescend to handle a spade. They were far readier to man an irregular force of police for the safety of working-parties and accept the liberal rates paid for any land that

must be taken over ; but the general atmosphere remained inimical. Every officer's bungalow became a fort, guarded all day and closed at night. For none dared go out after dark. But although hostility might hamper, it could not check British enterprise ; and in defiance of obstruction the strenuous work was carried on—to an utterly unexpected end. Such are the rewards of imaginative foresight in conception, linked with skill and persistence in execution : the rewards of risks taken at the right moment.

The small canal, only twenty miles long, was designed to serve some 24,000 acres, with the hope of better things to come. As it turned out, the shrewd Pathan made a virtue of necessity, and the canal itself went so well under Colonel Jacob's gifted management that early crops undreamed-of brought in food and money to a people chronically short of both ; and eventually the modest estimate of 24,000 acres to be served swelled to over 160,000. As for the political effect of that bold venture, it surpassed all that the most optimistic had dreamed. In 1875 those not over-hopeful engineers had set out to leave their mark on an uninhabited mountain region. In 1895 that region had blossomed into a wide and smiling valley thick with corn, dotted with villages, built and owned by the very tribesmen who had done all in their power to wreck the project. Groves and avenues of trees softened the landscape and created a peaceful atmosphere enhanced by the changed feeling of the tribes towards the white men who had brought about these incredible changes under their very eyes.

In '75 no officer might leave Cantonments without an escort ; in 1895 the whole Swat Valley was as quiet and safe as any part of the Punjab. But, since every good is shadowed by its attendant ill, so did the blessing of the canal bring in its wake the twin curses of mosquito and malaria, not yet recognised as cause and effect. Always in India something stronger than man seems to counter his every zealous effort at improving the land or the lot of its people. But in the Swat Valley good outweighed the ill ; more especially so, some decades later, when the small kingdom found itself under an unusual Chief, the famous

Väli of Swat. That natural ruler of men, like the great Akbar, could neither read nor write, yet he kept in touch with all modern developments in flying, motors and radio. He had flown all over his kingdom and linked it up by telephone. Better still, he brought peace and order to a country that had been torn by fifty years of strife.

It was in his time that there came to the Swat Valley another famous engineer—John Benton himself, back in the Punjab after two years of Burma, ready to fling his tireless energy into new fields of work that were opening out everywhere under the stimulating influence of Lord Curzon, who had resolved to save India from the curse of famine. He had sent a Commission under Colonel Sir Colin Scott-Moncrieff to tour the land and report on possible schemes, and on available land for new projects. He was the first of his kind to take a national view of the whole subject ; to aim at using all the rivers of India for the greatest good of the greatest number, by making Government the trustee of water rights throughout the country.

Into that vital subject Lord Curzon flung all his mental capacity and will to achieve ; aware that the great scheme he had in mind would occupy a full twenty years. He could only give the impetus, but at least he had the satisfaction of knowing that his own *régime* had revolutionised the whole Irrigation Service ; that through his impetus £20,000,000 worth of canals afterwards came into being. In his final survey of the subject he could say with truth, ' When we have done all this we shall have done what no other nation or country has done before.' Yet there is no part of his Administration so little known to his countrymen in England.

It is worth noting that this wholesale revival of irrigation had its origin in the effect on all concerned of the terrible 1900 famine. Conquest of famine has, in fact, been the keynote of progress in India ; progress that gave scope to many active and highly endowed engineers ; not least to John Benton when he returned from Burma, his fertile imagination seeking new worlds to conquer, new deserts to reclaim.

He at once saw the possibility of enlarging the Swat

Valley Canal system by tapping the river higher up beyond the Malakand Range. That it would involve boring a two-mile tunnel through that range was no deterrent to an engineer of his quality; and although the work was not a great one in size, it proved extremely important in outcome. From a purely engineering point of view it ranked among the boldest of its kind in all India. As a scheme, it made a direct appeal to the imagination, with its headworks beyond the Border and the political elements involved. Local opposition, this time, was more active; though the tribes living south of the range favoured the scheme from which they would obviously benefit. The rest could only see in it a palpable threat to their independence. But perceiving that none could thwart the Engineer Sahib, with a sanctioned project in his pocket, they accepted the inevitable and turned it, as before, to good account. Again they demanded a high price for any service rendered, and for quarrying royalties. Again a large force of irregular police accounted for a fair number of malcontents. But the Mohmand tribes, east of the valley, became restless and aggressive, bringing on themselves the Mohmand Expedition of 1908, and almost wrecking the project on which Benton had set his heart. Only his unremitting zeal and shrewd diplomacy on the part of all concerned saved it from extinction.

The canal itself, after fertilising four miles of the higher valley, reached the mighty obstacle of the Malakand Range. Through those mountains of Muscovite granite Benton bored his famous two-mile tunnel: a costly and strenuous affair, triumphantly completed in three and a half years. During that time work went on inside the tunnel day and night by shifts, without intermission; and beyond Benton's tunnel ran a hundred and forty-four miles of main canal, aligned along spurs and slopes of hills cut up by ravines and torrents, that needed no less than 167 crossings and seven lesser tunnels measuring a mile all told.

Once again the political result exceeded all expectation and clearly pointed the way to ultimate pacifying of that whole savage region.

The daring project was not completed till 1913 ; but we are concerned at present with the engineering activities of Curzon's *régime* ; and Benton was already exercising his ingenuity on a colossal scheme that would involve three out of the five Punjab rivers. The scent of a new project was as the breath of life to him ; an end to be pursued with every ounce of his driving force and concentrated fervour. For his industry matched his inventive genius, and his modesty equalled both. Day in, day out, he worked from 6 A.M. to 6 P.M. Never, if he could help it, would he take even a legitimate holiday, so completely absorbed was he in his intricate plans and calculations. 'The work, the whole work and nothing but the work,' might have been his motto ; and all that he could ask in that line was soon again to be given him.

During his absence from the Punjab much thought had been expended on the possibility of reclaiming the last wild tract of Crown land that lay beyond the Ravi, while superabundant water from the Jhelum still flowed unused into the sea. A surplus of water in the west, a surplus of waste land in the east, provided a problem congenial to any inventive engineer. How could the one be brought to serve the other ? The answer to that lies in the story of the Triple Canals Project, which in magnitude and skill outclassed every other work of its kind yet achieved.

The first proposal to make canals from the Sutlej, a great and noble river, was wisely vetoed by two far-seeing officers, the famed Colonel Jacob and Sir James Wilson, Settlement Commissioner, with a flair for irrigation. They argued that Sutlej water would be wanted, later on, to serve its own valley and perhaps two neighbouring Indian States. The far-off Jhelum was the only river with enough surplus water for so large a scheme ; and, between them, they evolved a complete plan that had all been worked out on paper at the time of Benton's return to the Punjab as Chief Engineer of the Province. It was made over to him by Mr Ward, personal assistant to his predecessor ; and he spent the whole night studying it in detail, improving and amplifying

it in his brilliant fashion. Then he sent in, for Government sanction, a project after his own heart.

It was to consist of three new major canals all operating as one (see map). First, an Upper Jhelum canal, that would carry its gift of water into the Chenāb—serving 346,000 acres on the way. Second, an Upper Chenāb canal—north of the flourishing colony—that would carry on the water to the Ravi. Over or under that famous river the far-travelled canal must go ; and over it went, by means of an enormous and elaborate level-crossing, of which the picture can only give a faint idea. The completed project proved to be one of the boldest and most far-reaching of its kind : a lasting memorial to the genius of its designer and creator, Sir John Benton.

Work on all three canals was begun in the same year ; but the first—from the Upper Jhelum River—was finished last, owing to immense difficulties of construction.

For over sixty miles it had to be carried along the slopes of the Pabbi Hills below Simla—a feat that few men would have attempted. Yet John Benton successfully carried it through with the help of 150 skilled engineers.

That the whole affair took a decade to complete was no surprise to those who understood the nature of its many technical triumphs. The first deep cutting, for instance, through which the canal began its strange career, took full three years of continuous work, night and day in two shifts, with every labour-saving appliance. After that, it passed in quick succession over high embankments, through more deep cuttings, crossed by seventy torrents from the hills, each one needing special treatment : a gruelling time of acute physical discomfort—labour apart—with the Indian climate excelling its own record. The nature of the work required miles of tramway and a rolling stock—‘ very strange beasts ’ in the eyes of coolie-folk. Even a light railway had to be built and kept up entirely by the engineers themselves.

The first of the canals to be opened was the Upper Chenāb—the middle link in the chain. That viceregal occasion lacked only the presence of Benton himself, lately retired,

after thirty-six years devoted intensively to the profession he loved and adorned.

To him, among others, Lord Hardinge paid a handsome tribute, with his own additional comment, 'I sometimes think that the profession of an engineer is one of the most attractive of all. Whatever his work he can see it growing under his hands. He can feel the peculiar satisfaction of converting the waste-lands of earth into a garden, where the gaunt spectre of famine will for ever be laid to rest.'

His Excellency appended a warning that the great benefit of canals could be overdone, if the land were allowed to become water-logged and unhealthy. He reminded the Punjabis that they owed their sturdiness and fine physique largely to their dry healthy climate and to the difficulty of winning a livelihood from its desert soil. Let them not, through prosperity, risk undermining their priceless heritage. It may be added that the Punjabi peasant, on the whole, has come well through the test.

A year later saw the opening of the Lower Bari Doāb canal, in the making of which Mr Rose and his assistants notably distinguished themselves. Only the great Upper Jhelum adventure tarried; was, in fact, almost wrecked in April 1913 by a quite unexpected disaster. Without warning the river rose to a level beyond any experience, burst the barrier of rock that divided it from the canal, submerged the regulator and tramway lines, bringing the whole work to a standstill for months on end.

So the canal was not opened until December 1915; and not even then was the whole vast scheme complete. It had cost the State ten and a half million pounds; but it more than repaid the outlay, the thought and work put into it. The newly reclaimed Lower Bari Doāb alone—the Youngest Colony—became so rapidly peopled and prosperous that, in five years' time, the value of the crops it raised amounted to nine and a half millions. Its villages were thronged with happy and well-to-do settlers from all parts of the Province; many of them retired Indian officers who had done good service in the First Great War: an asset to

any community. Even criminal tribes were weaned from their thievish propensities by the magic right of owning their fragments of land. Everywhere evidence of wealth increased; much of it arising from the sale of American cotton, a crop that brought in on an average two million pounds a week.

Such is the debt owed by that Youngest Colony to the Sirkar and its engineers, who had harnessed the Upper Jhelum and carried its waters across the Ravi, bringing fertility beyond belief to a tract that, for centuries, had defied all human ingenuity and labour.

We come now to the third distinguished engineer, Sir Thomas Ward, C.I.E., M.V.O. In all the projects associated with the names of Benton and Jacob he played a notable part; and already his name has appeared in my account of the Punjab Canal Colonies. Into that creative and constructive adventure he flung himself with all the ardour and eagerness, the sympathetic human interest that lit up, as with a clear flame, every task to which he set his hand.

Like Benton and Jacob, he was a Cooper's Hill man; like both, a devotee of his profession; yet it is doubtful whether either possessed, in an equal degree, the extraordinary enthusiasm that vitalised every phase of his work throughout the thirty-seven years of his varied and valuable career: work that took him to Seistan and Siam, to Mesopotamia and Brazil. Through it all, he remained heart and soul a canal officer; an embodiment of the best traditions of his service; and, in pursuit of his one supreme hobby, magically alive.

Witness a tribute paid to him by the Editor of *The Pioneer* on his departure from India: 'To Sir Thomas it was not only the joy of overcoming difficulties. It was the aroma, the solitude, the whole atmosphere of canals and canal work. He loved the wide open spaces of jungle life, inspections in the cool air of dawn, the scent of mustard fields, the sight of running water and the green things growing all around. He enjoyed conversations with his subordinates and the cultivators. He liked to be among them, waving them on

with his enthusiasm like a flag. He constituted himself a sort of watch-dog of the Service, a knight of the Irrigation Round Table ; and his eagerness to find romance in water was almost like a quest of the Holy Grail. . . . It was no pose ; in his attitude and utterances there was no taint of affectation. His work was a joy. The only thing that tormented him, when he met it, was the apathy of others. . . . In the vision before him he never grew old or disillusioned ; and although he must have had his share of disappointments, his eager temperament stood out against the drab background of normal canal routine like a vivid patch of colour.'

And, after many years of retirement, he still retained undimmed the interest and enthusiasm of his prime.

Will the changed conditions of Indian service breed men of a like quality to those three ?

They had all left India long before the opening of the Sutlej Valley Project by Sir Louis Dane, then Lieut.-Governor of the Punjab ; but to them, as to the whole gallant army of engineers, apply the final words he spoke on a like memorable occasion :—

' It is well that people should know not only the magnitude of our works, but also the endless toil and moil of brain and hands with which they are made. . . . It is such achievements as these that really count in good Government more than all eloquent resolutions and elaborate rules. Here we wrestle with Nature in her wildest moods, for the benefit of mankind ; and, with the help of God and a good courage, we prevail. All honour to whom honour is due ; as here it undoubtedly is to our magnificent Irrigation Department, whose humble friend and helper it has been my privilege to be.'

Never were words of praise more aptly spoken, more signally deserved.

THE SALVATION OF SIND AND THE SUTLEJ VALLEY

1

'The rock remains after the billows are gone. This is the only invincible people in the world—this race.'—WALTER PAGE.

THIS long strip of desert country, west of the Punjab—stretching from the mountains of Baluchistan to the Province of Bombay—is hardly known outside India; yet it is here that the crowning marvel of British engineering skill has been brought to pass. The far-reaching effect of that masterpiece in stone, the Sukkur Barrage, can only be conveyed by giving some idea of the land and its people before the day of salvation dawned for them.

Few countries could have looked more unpromising than Sind in 1843, when General Sir Charles Napier sent his famous telegram 'Peccavi' (I have Sind). Throughout its hundred and fifty miles of length, unrelieved desert spread away on all sides to the utmost horizon. Northward rose the savage sterile mountains of Baluchistan. South-westward its confines reached the unfertilising waters of the Arabian Sea. Eastward it lay alongside the vast desert of the Punjab; and between the two flowed the mighty Indus: the one boon given by Nature to a race of men who deserved better at her hands. For the people of Sind have survived, as it were, in defiance of 'all the climatic curses at her command'; have proved themselves men of courage and resource, of patience under privation, of capacity for indomitable toil; past-masters at reclaiming waste-land by such primitive means as were available in pre-British times.

The Indus, a veritable River of Life—giving its name to their country and to all Hindustan—was and is worshipped by them even as 'Father Tiber' was worshipped by the

people of ancient Rome. While the patient peasant wrested—or failed to wrest—his yearly harvest from the reluctant earth, for ever there flowed past him that inexhaustible supply of water ; tapped, here and there, by primitive canals of the inundation type already described. These were filled only in flood-time between July and October, provided the monsoon did not fail. For the rest of the year all fields lay idle in a land where husbandry was the prevailing way of life. Yet the history of this people—as traced through the wonderful discoveries at Mohanjedaro—goes back and back to the most ancient records of civilisation, when the men of Sind spread their art and culture throughout the world. Even now, traces of it are still to be found in every port of the Seven Seas and among the wilds of Central Asia.

In the twentieth century little trace remains of that vanished glory. Even the peasants' husbandry was thwarted by the elements. Between the niggardly heavens and the uncontrolled wealth of the river, his staple way of life became little more than a gamble, with detrimental effect on his character.

An industrious *Zemindar* would sow his crop at the good moment when flood canals were running. The water supply might continue for weeks. Seeds would sprout, green blades appear. Then, on a sudden, the canal would shrink to vanishing point. The young green blades would slowly wither and die. No choice but to plough it all out and sow more seed on the next rise of the fickle canal, probably with the same disheartening results. By repetition and good luck he might possibly secure one crop ; but, more often than not, the result of three separate sowings would be—nil ; while a careless *Zemindar*, by mere chance, might do as well, if not better, than his industrious neighbour.

In such conditions—condemned for eight months to virtual idleness—only men of strong moral fibre or large money reserves could keep up a steady interest in farming their land ; though they had proof that their desert soil, like that of the Punjab, could be amazingly fertile. Only water was needed to work the miracle ; and water, except in capricious quantities, they could not command. What the

coming of skilled British engineers must have meant to a land so ill served only the imaginative mind can conceive ; and their coming followed hard upon the conquest of the country.

It was in 1843 that Major William Baker, R.(B.)E.—whom we last met on the Ganges Canal—was transferred to Sind, where he worked so strenuously for more than a year, on the banks of the Indus, that he may be said to have founded the essential water supply that culminated in the great feat of harnessing the Indus, now to be described.

Baker reported, advised and surveyed, but it was an R.E. subaltern, Lieutenant Fife, who in 1849 began the actual making of the first inundation canals, which must have seemed to the Sindis of that day as great a marvel as did the gift of perennial canals to their descendants seventy years on. These last were, in fact, strongly advocated by Fife himself, after seventeen years of experience in developing the uncertain system of flood canals. He actually proposed and designed the very first plan for harnessing the Indus ; yet it so befell that between his original proposal in 1855 and the opening of the Sukkur Barrage in 1932 stretched the almost incredible span of seventy-seven years : a never-ending sequence of surveys and more surveys, of projects put forward, returned and revised, of haggling over finance between the Governments of India and of Bombay.

It may be of interest to trace briefly the chequered history of that valuable project from the year of Lieutenant Fife's first able report to Government on the importance of supplying Sind with perennial canals. After long delay, back came his estimate for revision and further surveying of an unknown country ; and not until 1859 did Bombay recommend the scheme to Home Authorities, urging commencement as soon as funds allowed.

Home Authorities, by way of prompt response, left the whole matter in abeyance for a trifle of eight years.

In '67 a revised and enlarged scheme was sent in by yet another engineer. In '69—after two years in a pigeon-hole—it was returned for revision. That year the Secretary of State in London urged the immediate necessity for perennial

canals in Sind, but the new scheme received little support from the Sind Commission.

In '71 the Government of India asked Bombay to prepare projects for those urgently needed canals; yet nothing definite was done till '77-'80, when again the Secretary of State forcibly urged the importance of improving the canal system of Sind.

Response from Bombay—after two years of pigeon-holing—was an official damper to the effect that perennial canals, though feasible, were not considered necessary.

There the matter dropped till 1890, when the, then, Governor of Bombay indited a note on the subject commending Fife's proposal of thirty-five years earlier, for further inquiry.

Result: a game of cross-questions and crooked answers leading up to the inevitable committee, which tardily arrived at the negative conclusion that the scheme for perennial canals be dropped. Thereupon large sums were squandered on an existing system that did not meet the country's need.

Beyond that, no further moves were made till 1903, when the Curzon Commission appeared on the scene and brought fresh minds to bear on the subject. As a result, they approved the original plan presciently proposed by Fife: a plan that was now nearly half a century old. In 1906 orders were issued to 'carry on'; and at last light seemed to dawn for Sind; but in 1909 there began a long-drawn controversy, between Governments and individuals, an affair quite outside the grasp of the lay mind.

For three years the bloodless battle raged—reports and arguments and counter-arguments without end; patient Sind at the mercy of an official trinity—Bombay, Simla, London—seemingly unable to arrive at unity. From their genuine efforts there emerged yet another committee and another report to the Secretary of State, who 'declined to sanction the project,' his predecessor having pressed its urgency many years earlier.

Finally, in 1915, Bombay—in the person of its Governor, Lord Willingdon—again approached Simla with an outline project that would ensure for Sind the regular water supply

long since enjoyed by the Punjab ; and in 1916, with a world at war, sanction was received for the building of a barrage across the Indus controlling canals from both banks, four from the right bank, three from the left.

Concord at last ! But, owing to the war, nothing practical could be done till 1918.

Happily at that time the long-suffering Sindis were blessed with a Commissioner of ability and zeal, the present Sir Henry Lawrence, great-nephew of the man whose name he bears and whose devotion to the interests of the people he has inherited in full measure. For three years he made it his chief concern to press on with the sanctioned project by every means at his command. And he had his reward. In 1919, before leaving Sind on furlough, he was able to supply Lord Willingdon with the completed scheme.

In 1920 it reached the Government of India, who sent it on to the Secretary of State with a despatch that handsomely acknowledged all it owed to the untiring efforts of the Commissioner in charge of the country.

' We consider,' ran the despatch, ' that this scheme, when constructed, will revolutionise cultivation in Sind, and convert it into one of the most prosperous tracts in India. The credit for this most satisfactory achievement is due primarily to the Hon. Mr H. S. Lawrence, C.S.I., Commissioner of Sind, who has controlled the local authorities, in the various departments concerned, so as to prevent controversies which have in the past so greatly interfered with the systematic preparation of a well-considered scheme ; and has, with a most inadequate staff, evolved a project that is more complete in detail than has ever been attained before. Our Inspectors-General of Irrigation, Sir M. Nethersole and Sir Thomas Ward, have . . . been of the greatest value.'

That official blessing took effect as well it might. In 1921 debates in both Houses of Parliament gave the ' grand Amen ' to a practical proposal that was then in its sixty-sixth year : a record of its kind. Yet even at the eleventh hour, finance again reared its head ; and on that rock the whole scheme might have been wrecked, but for the driving

force and resolution of Lord Lloyd, then Governor of Bombay.

Thus was the last of the five great rivers condemned to be harnessed, after centuries of freedom, for the benefit, not only of Sind, but of all India. Every necessity of life, including American cotton, could be grown in the revived soil. Railways would increase export trade, and the wealth of the Province be increased threefold. Nor would material gain be the only outcome. To harness the river would be to liberate the energies of the people by giving them profitable employment for twelve months, in place of precarious employment in the four flood months only; to make an end of the semi-idleness and uncertainty that increased a natural tendency to steal their neighbours' cattle and women. Steady work and interest, with assured results, would lift their standard of living and of morality in every sense. It would banish the prevailing dread of famine that had for many years been banished from the Punjab: a gift overlong delayed, but rich in its values actual and potential.

Thus we arrive, by devious ways and delays, at the actual making of the mile-wide barrage—the most impressive work of its kind in the world; controlling, for the first time, the mightiest river in the world. The ultimately chosen site near Sukkur was approved by Sir Thomas Ward as 'ideal': three miles below a limestone gorge that controls the river, so that it flows past Sukkur in a steady stream. There, at river-bed level, the builders had to lay down a concrete masonry floor able to sustain the superb double bridge of sixty spans, each fitted with great steel sluice-gates that slide up and down grooves in the piers. These, weighing fifty tons each, are hung on steel cables, balanced by huge concrete weights, and worked by electrical machinery from the high over-bridge. In this way they can be completely dropped to impound the river when water is scarce; or raised till they are eight feet clear of the highest known flood level, so that the river may flow unchecked between the piers. A lower bridge over the same piers would carry a thoroughfare for traffic five times the length of London

Bridge, thus linking up the main roads on either side of the river.

The whole superb structure, with its elliptical arches, built of creamy-white limestone would have an aspect of massive simplicity in harmony with the vivid colouring of that fine sweep of the river—one of the few really beautiful stretches throughout its whole length in Sind.

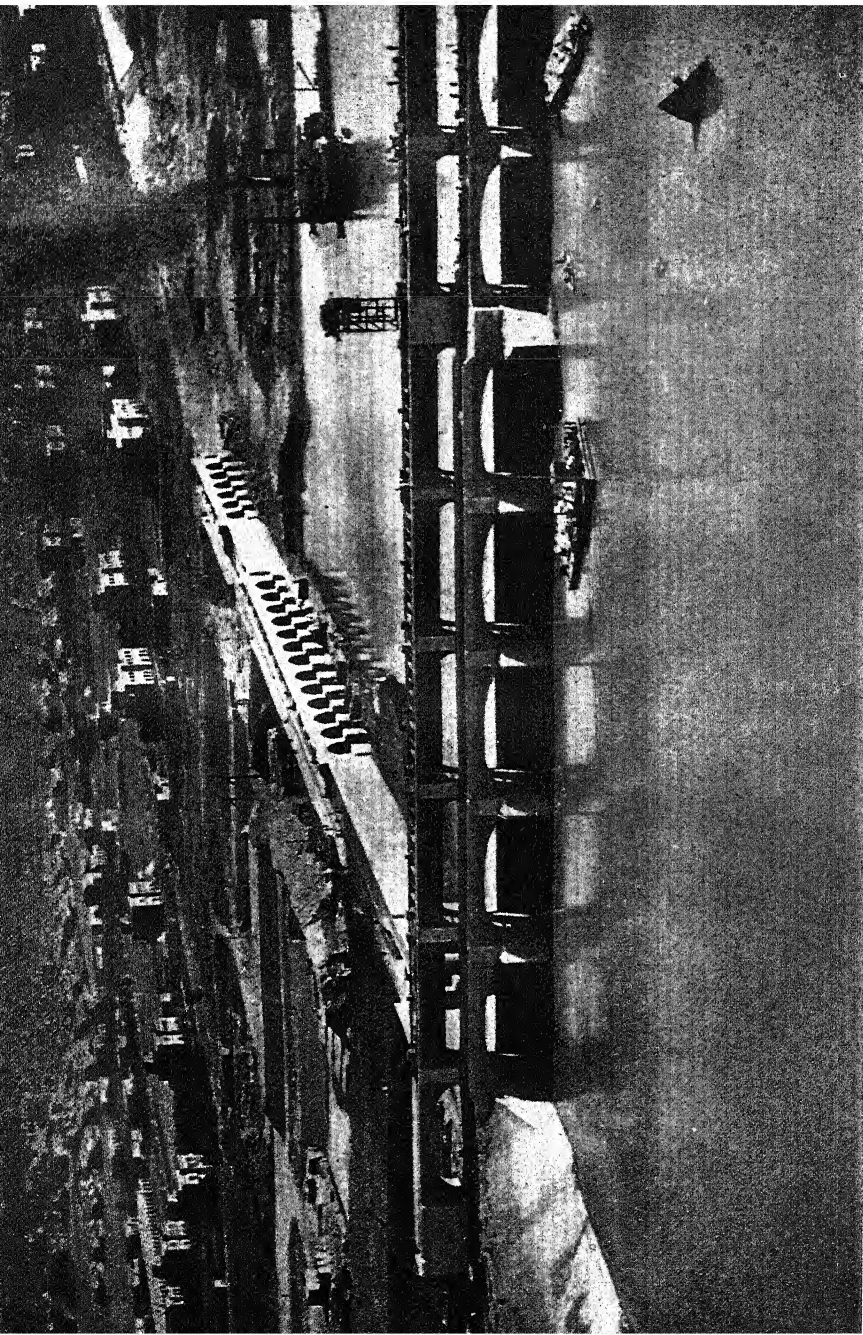
From the illustration a faint idea may be gleaned of the general effect, but no picture can do justice to the noble original. 'On a clear moonlit night,' writes Sir Montague Webb, 'its long lines of snow-white arches, stretching away in perspective across one of the greatest rivers in the world, is a truly inspiring sight.'

Up-stream, above the barrage, would rise the masonry headworks of seven main canals, that would flow southward for some two hundred miles, feeding the desert with water of life.

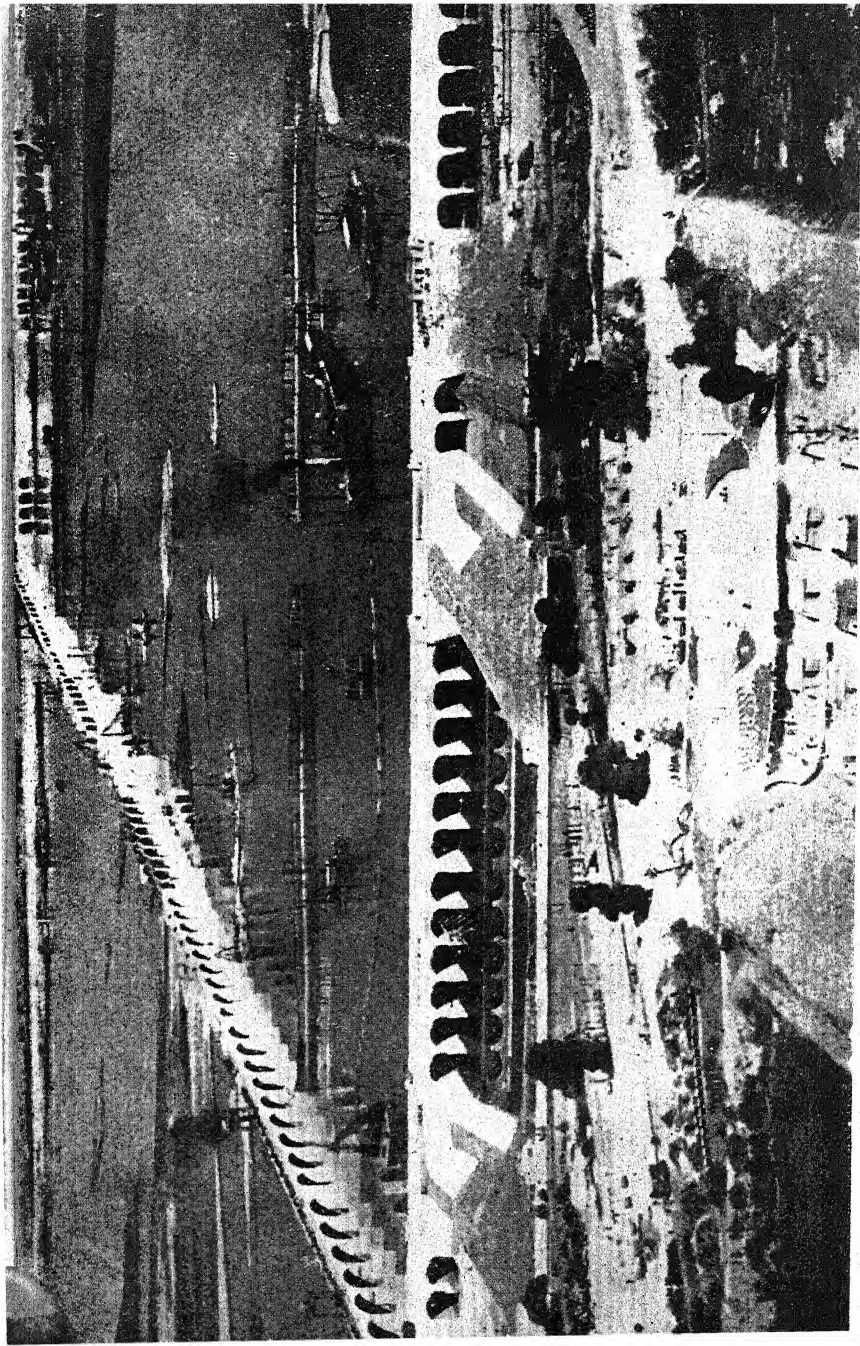
Here was a bold conception to fire the born engineer; and in Mr Arnold Musto the Bombay P.W.D. produced a man in every way fitted for so mighty a task. To him was given the double privilege of designing and building that mile-long dam, under the direction of Sir Charlton Harrison, Chief Engineer of the whole project. Both men were deservedly knighted for their twofold achievement; and Harrison, in particular, was blest by his assistants for his care and thought in protecting them, as far as might be, from the terrible climate of Sukkur, where the mercury often touched 120° for months on end.

Harrison had the wisdom and humanity to insist on proper housing of his engineers, the common comforts of electric fans and light before he would ask them to begin work; and they, in return, gave of their utmost without flagging or intermittently 'crocking up'; and in record time they completed their seven canals.

The story of those intensive years—the checks, the vicissitudes and triumphs—would fill a small volume; but no such volume exists. The P.W.D., like the Navy, is a silent service. The results are recorded, but too little is heard of the men, whose work does not by any means begin



View of Barrage and Canal Head Regulators.



Left and right bank Regulators and Barrage proper spanning the river.

and end with the making of canals, the reclaiming of deserts or even protection from famine. It is a sphere that opens up wide fields in almost every branch of Indian service.

For a partial account of this particular marvel we have to thank Sir Montague Webb, who described, in a memorable speech, what he saw for himself while the famous barrage was taking shape under two brilliant engineers and their hard-working staff.

'I happened to be in Karachi,' he said, 'during those seven years; and, as one who took a very keen interest in Sind, I visited Sukkur at intervals to take note of progress. For the first year or two little could be seen. Plans were being matured and special machinery made. By degrees many workshops appeared on both sides of the river. Great stone quarries, equipped with the latest wire-sawing machinery, were opened and the hills sluiced into huge white blocks of which the barrage was to be built. Attractive townships grew up, with houses and roads and public services, all complete. For a quarter of a mile up-stream, on both sides of the river, massive stone floors, fifteen feet thick, were gradually laid down; then the foundations of the head-works for the seven canals came into view. Finally, the huge piers of the barrage itself began to grow from each side of the river; all built inside great coffer dams that protected them from the force of the river in flood-time. The coffer dam, for the middle section only of the barrage, covered forty-nine acres. Surely there never was such a dam in the world's history. And when the river came down in flood, that huge obstruction, in the midst of raging waters, was an astounding sight.

'I shall never forget one night when the Indus had risen within six inches of the top, and tens of thousands of men were working feverishly inside, piling up sand-bags to raise the dam by another foot or so. For if the tearing waters overtopped it, the lives of thousands inside would be endangered, and valuable machinery, with the work of years, would be destroyed in a few hours. On that terrible night there was no man calmer than Sir Arnold Musto.

Happily the river began to subside before morning—and the position was saved.

'After seven memorable years,' he concludes, 'of strenuous and nerve-wracking work—in a climate that would have broken many less robust personalities than Sir Arnold's—the headworks of seven huge canals and the long barrage itself were duly completed in December 1931: a work that no superlatives can over-praise and that future generations will surely regard as the Eighth Wonder of the World.'

The entire system—barrage and headworks—was finally opened by Lord Willingdon, as Viceroy, in December 1932, seventy-seven years after its first inception by a distant, half-forgotten Lieutenant of Royal Engineers. The Viceroy dispensed official eulogies, genuine and deserved. The assembly viewed with awe and amazement the endless succession of creamy-white arches, embodiment of simplicity and strength. But not many bestowed a thought on the living perishable material behind the imperishable achievement: the succession of engineers and others who had put into it some of the best years of their lives.

The complete scheme was lauded in a *Times* leading article as 'a work of the utmost importance, that will bring under cultivation a region to be measured in millions of acres. The Sukkur Barrage itself, on the material side, must be coupled with New Delhi, on the social and political side, as the two greatest achievements of the King's reign.

2

'One has to have travelled in the Punjab to realise what immense benefit the domination of the English in India is to humanity.'—VICTOR JACQUEMONT.

A transfer from the Sukkur triumph to the vast Sutlej Valley Project covers a large slice of India in space; yet, in time, the two marched almost side by side, both having a chequered background of over seventy years, both

originating in the brain of a gifted R.E. subaltern and being completed within a year of each other.

So, in the post-war decades, it befell that, while Bombay engineers were excelling all records, their fellows in the Punjab were doing much the same on a scheme of equal, if not greater magnitude—the Sutlej Valley Project, which may fitly be said to crown England's fifty years of canal work in the Punjab. Its heavy total cost of eight millions sterling has been more than justified by the widespread revival effected not only in British India, but in two desert Indian States, Bikanir and Bhawalpur.

Like most schemes of its kind, it was beset by endless early difficulties and delays. More than once it was in danger of being wrecked on the reef of expense. More than once it was held up by a jealous rivalry between the two Indian States: Bhawalpur fearing there would not be enough water for his need; Bikanir urging the desperate case of his barren State, devoid of a single river to fertilise its soil. With what fine persistence and intelligence that remarkable Prince virtually re-created his kingdom I have told in my recent book, *Royal India*; and in the early days of the Sutlej Project he went personally to Simla, to put his case before Lord Curzon, whose active concern for the welfare of the States assured him of a sympathetic hearing. Nor was he disappointed of his hope; but unfortunately Lord Curzon left India before the scheme could be put in hand; and, as delay followed delay, the Maharaja's hope sank almost to zero. Not until five years later was the plan finally accepted, with a view to beginning the actual work in 1912.

At last Bikanir saw the fruit of his labours almost within reach; but yet again his hopes were dashed by the unhurriable methods of Government, and by probable obstructions of which he knew nothing. Year after year passed with no sign of work begun; while his people waited in vain for the boon of the great Gang Canal that was to be his crowning gift to them. War in Europe held up all costly schemes, however important; and it was not until 1920, under the ægis of Sir Michael O'Dwyer, that the triple agreement was at last signed by the Punjab Government,

Bikanir and Bhawalpur. This was actually—if incredibly—the twentieth version of the scheme sent up for home sanction ; and there to the relief of all concerned its chequered career was stayed.

Then could the Maharaja push on with his cement-lined Gang Canal, having secured the services of a skilled and resolute British engineer, an exceptional personality endowed with energy, vision and a capacity for detail not often coupled with the far-seeing mind. East and West worked together in complete accord for the good of Bikanir ; but the success of their brave enterprise hung on the completion of the Sutlej Valley Scheme ; and now, at very long last, it was under weigh.

Actual work once started, it went forward at a satisfactory pace, when one considers that it involved the building of four barrages—one of them only second to that which spanned the Indus ; the making of ten canals with a combined length of some nine thousand miles, designed to serve about five million acres, at a total of £16,000,000—less than half the cost of carrying on the Second World War for two days only. Such figures, however impressive, give but a faint idea of actualities. 'It is difficult'—writes Sir Bernard Darley in 1941—'to envisage the magnitude of these vast schemes, each of them commanding a region greater than the whole cultivated area of Egypt. It is doubtful whether either of the two will be remunerative for many years to come ; but the fact remains that they have provided an enormous increase of food for the ever-growing population of India and have brought security and content to millions of poor cultivators.'

The Sutlej scheme, though it tarried, was helped forward by every device of labour-saving machinery. Begun in 1922, its first headworks were opened by the Punjab Governor in 1926 ; and the second, eighteen months later, by the Viceroy in person, Lord Irwin.

Then did the Maharaja of Bikanir and his British helper reap their long-delayed reward in the triumphant opening of the Gang Canal, entirely lined with concrete from the Sutlej headworks downward, for a distance of eighty-four

miles : the longest concrete-lined canal in the world. The new city built on its banks was now be-flagged and decorated, thronged with distinguished guests, British and Indian, honoured by the presence of Lord and Lady Irwin. The whole concourse of distinguished guests were entertained with a lavish splendour and attention to personal comfort associated with the name of Bikanir.

A brilliant October day witnessed the arrival of many ruling Princes ; while their untiring host—a splendid figure in full uniform—stood in the hot sun to welcome them and others : two hundred guests in all. The whole canvas city set up for them suggested an oasis in the desert. On every side stretched unlimited sand, in hillocks and ridges, silting up the narrow railway line and primitive stations, penetrating everywhere, even into State railway coaches of the Burra Lāt Sahib and his Lady. Yet, in the new-made city of Ganganagar, even the all-encroaching desert seemed to be partly held at bay. Shrubs and plants had been surprisingly persuaded to thrive in its unpromising soil, to beautify the many camps that, at sight, seemed unreal as a mirage ; but within those camps all was real enough to satisfy the most exigent ; every detail bearing the stamp of the Maharaja's personal touch. Here was luxury even surpassing that of the well-known Bikanir tradition : drawing-rooms gay with silk fittings and hangings in green and white, mauve and white ; gramophones voicing all the latest London airs. And when evening fell every building was outlined in light ; the infectious rhythm of the fox-trot was heard in the desert : a brilliant prelude to the morrow's great occasion.

Yet beneath that surface brilliance lay a full recognition of all that the coming official ceremony signified for Bikanir ; all that the pressing of a button by the Viceroy would bring to peasants who spent their days in wrestling with the reluctant earth. For nearly a week prayers had been offered at the closed gates of the canal, which would serve only a thousand square miles out of the 23,000 that made up their riverless kingdom. The marvel remained ; and it was recognised as the promise of even greater things to be. The King-Emperor himself had sent a telegram of

congratulation to the Prince, who had been for many years his very good friend. Bikanir's whole future would take on a brighter aspect by the pressing of a button to-morrow afternoon. The camp, the State drawing-rooms, the illuminations and festivities were simply incidental to that supreme fact.

Came the great day : splendour out-shining splendour in the scarlet *shamiāna* set up near the Dam, with scarlet carpets assiduously swept ; the massed forces and the glittering line of State troops, the silver spears flashing in the sun, the white tunics of Bikanir's famous Camel Corps : blue, yellow and green blended against the monotone of the desert.

Far down along the canal bank hundreds of peasants had been awaiting the given moment. Many prayers had been said, most of them to Ganesh, the Elephant God of good luck. At the approach of the Viceroy's car, the guard of honour presented arms, the State band played " The King-Emperor " ; and through it all ran an under-current of sound—a chorus of prayers from the coolie-women who had played their humble part in the great work.

On either side of the Viceroy and the Maharaja, with his two sons, rose tier on tier of Indian Princes in State array, a dramatic contrast to the group of sober-coated officials and six yellow-robed priests, who were to chant the final prayers when the time arrived. Beyond the *shamiāna*, on the Dam itself, stood a pedestal bearing a silver elephant with a golden howdah—and under the howdah lurked an ivory button to be pushed by Lord Irwin at the exact moment calculated by the State astrologers. These had decided that the ten minutes between 5.25 and 5.35 would be the most propitious for releasing the water that had travelled eighty-four miles from the River Sutlej to desert Bikanir.

But first there must be speeches by Viceroy and Maharaja, who hailed the completed scheme as a witness to the identity of interests between the British Government and the Indian States.

Then did the holy men precede the Viceroy on to the Dam ; and there, standing in full sunlight by the symbolic pedestal, they chanted prayers for a blessing on the waters

that were about to be released at a touch of the Lord Sahib's hand: prayers timed to finish exactly at 5.30 on that 26th day of October 1927.

In full view of a vast, expectant throng the ivory button was pressed, the two gates lifted and the first great wave of water gushed out, silver-bright in the rays of a westering sun.

To British eyes, that release of impounded water was a matter of interest and satisfaction made impressive by the pomp and circumstance, the religious fervour with which India glorifies and sanctifies any high occasion.

To Eastern eyes, that gush of living water—where none had flowed since Bikanir's only river mysteriously vanished—was no less than a miracle wrought for them by the Viceroy, the Maharaja and the gods.

At sight of it there went up a cry of joy and thanksgiving from thousands of coolies lining the banks for miles. The troops, by order, broke their formation and came crowding, scrambling down to the new canal; while a single peasant, bolder than all, distinguished himself by dashing across its dry land a hundred yards down, just before the oncoming waters hid it for ever.

Later in the day, when the deserted canal flowed serenely along its new channel, silver-grey in the blue dusk, lights began to flicker throughout the shadowed city: rings of light, towers of light, squares of light, swift as magic, though actually the work of skilled, unseen human hands lighting thousands of wicks in little clay saucers of oil. For the opening ceremony had been timed to coincide with the Diwali, the autumn Feast of Light, sacred to Lakshmi, Goddess of Good Fortune. Palace, bungalows, bazaar roofs and squalid buildings were transfigured, for an hour or so, by those flickering lines of fire; the people themselves lifted on a wave of worship and stirred to exultation by the booming of a hundred and one guns—the Imperial salute.

The camp, that could not be traced in light, was encircled with lanterns. Fireworks crackled and spluttered, dancers planned their interminable entertainment, the banquet was prepared for the feasting of two hundred guests. Outside,

between its empty banks, the new river flowed quietly on under the stars, to the eternal wonderment and refreshment of Bikanir peasant folk, for whom it was simply and actually a direct gift from the gods.

The British opening ceremony at Ferōzpur, one day earlier, was by contrast a matter-of-fact affair, for all its thronged *shamiāna*, its uniforms and guns.

Lord Irwin's speech, on that occasion, was a less formal affair, chiefly notable for his eloquent and genuine tribute to the wonders of Punjab irrigation, a side of British rule scarcely realised outside India, though the bare facts and astonishing outcome of those wonders are known to the world.

'The more I have seen,' said Lord Irwin on this occasion, 'the more have I come to appreciate the inestimable value of the work that Irrigation Officers have done in the past and are doing every day. . . . The history of the growth of perennial canals in India is an enthralling story. We have travelled far from the old indigenous systems of the fourteenth century. . . . Since the construction of these great classic works the Ganges Canal, the Upper Bari Doāb and Godaveri Delta System there has been no pause in the activity or extension, in improvements of method and design. Much of the credit is due to the wise policy of Government in the past, but even more to the devotion and skill of successive engineers, to generations of Settlement Officers and the co-operation of Indians in the development of all great projects. It has been the history of a fine partnership for a noble and wholly beneficent purpose. I should like to take the opportunity of paying tribute to those officers of the Punjab Irrigation Department on whose skill and devoted services the present prosperity of the Province is based. . . . The full fruits of irrigation, however, could not have been gathered without the full participation of landowners, cultivators and the sturdy peasantry of the Punjab. It has, in fact, been a great association of officials and non-officials, of British and Indians in a work in which all alike can take a just pride.

'To-day perennial canals in India irrigate nearly thirty

million acres, an area three times the size of Denmark, and the total length of their channels and distributories would girdle the earth twice over. Let us rejoice to see the vagrant waters forced into an orderly course, stealing into the far desert, bringing fresh youth to barren soil, fresh hope to hearts of men who never dreamt of beholding streams of water such as these.'

Those who have been induced to read this partial tale of the transformed Punjab will hardly question the justice of Lord Irwin's tribute to that silent service, the P.W.D. Faithful in discharge of important duties far from footlights and publicity, it has produced works as noble as any in recorded history. Whatever the future of India, that service will leave behind it an imperishable monument of patient, skilful and unselfish labour for the mass of India's people.

And the end is not yet.

AFTERWORD

'That the differences between British and other Imperial rules should add up to such imposing totals may seem surprising. However, history shows that they do; and the differences will become even greater in subsequent years.'—ALBERT VITON: (Gt. Britain).

THE value of that frank statement is enhanced by the fact that it comes from a hostile American critic who appears to have been impressed against his will. Lord Lawrence, were he living, might have accounted for those surprising differences in the same terms as he accounted for the merits of the Lawrence Administration: 'It was not our system. It was our *men*': a true answer in both cases. British Indian rule, personal at its best, too soon became an over-centralised bureaucracy, with all the faults of that deplorable system—wittily defined by one of its victims as 'Government by files and despatch boxes, tempered by occasional loss of keys.'

History also confirms the dictum of John Lawrence. For the Anglo-Saxon, in himself, is no bureaucrat. By temperament and tradition he is an individualist, apt to pull against the collar; but, given a free hand, he will bring mighty things to pass. 'Not the system, but the men': there lies the secret of all that has been best in British rule.

In that connection it is worth recalling the impression made on the poet Goethe by the ordinary young Englishman of a hundred years ago.

It happened that he was discussing with Eckermann the power of those 'fresh young islanders to disturb the tranquillity of homely German families and enthrall the ladies of Weimar.' For all that, Eckermann would not have it that young Englishmen were therefore 'more clever and intelligent, better informed and more excellent at heart than any other people.'

To which Goethe, with deeper insight, replied: 'The secret does not lie in these things, my good friend. It lies in the courage they have to be that for which Nature made them. There is nothing vitiated or spoilt about them; nothing half-way or crooked; such as they are, they are thoroughly complete men. That they are also sometimes complete fools, I allow with all my heart; but that is still something and has always some weight in the scale of things.'

The opinion of a Goethe—unbiased in their favour—has also 'some weight in the scale of things.' Few were better fitted than he to recognise a complete man at sight. He cryptically added, 'They are dangerous young people; but in the very quality of being dangerous lies their virtue.'

And what of to-day?

A century has changed the world almost out of recognition. It has also changed the average young Englishman—his tastes, his outlook, even his beliefs. Yet, he still remains at heart the eternal boy, younger for his years than men of other races. He still retains the peculiar quality of completeness, shrewdly singled out by Goethe and puzzling to most foreigners.

In the modern sophisticated young man that distinctive trait is apt to be overlaid by a stuccoed uniformity of manner; but, at his best, he can fairly be classed as the complete gentleman or the complete fool, according to the point of view. In general, he neither prides himself on the first nor troubles to disprove the last. He still, on the whole, has the 'courage to be that for which Nature made him': no militarist, but a born warrior, as the battlefields and brilliant leadership of North Africa and Europe have proved beyond cavil.

The varied record of his Indian services reveals him as very much the complete man, from the Victorian Eighteen Forties—with its unashamed ardours and unshakeable religious beliefs—to the Georgian Nineteen Twenties, a phase of doubt and disillusion and shaken standards; a mental and moral fog blown away by the strong wind of a second war.

Throughout a hundred changing years those dangerous

young people have continued to serve India, better in some periods than others ; but always with certain bed-rock qualities, that have nothing brilliant about them, though they have created and maintained the world's greatest Empire. Briefly, those qualities amount to 'strength of character, courage, integrity and simple devotion to duty.' Throughout these pages we have seen British officers and civilians making roads, railways and canals ; creating whole provinces ; fighting famine and disease ; keeping the ancient gateway of the Khyber Pass ; everywhere giving that zealous and disinterested service which has become recognised as a primal quality of the race—the hall-mark of the gentleman.

This first instalment of a many-sided theme deals mainly with the work of military and civil engineers—essential pioneers in the revival of all waste-lands, the building and linking up of all cities. In their case, as in that of other Imperial Services, one can only reveal a fragment of a fragment of the immensity that is India. But I have at least been able—where records permit—to revive the memory of a few men, among many hundreds, who have deserved well of both countries ; men who bore out in their lives the generally admitted fact that the most notable British achievements in India have been triumphs of character, nowhere more so than among the soldiers by whom the foundations of Empire were well and truly laid. In the main, it was soldiers who created the tradition of the principal Civil Services : the Administration—from the District Officer onwards—the Political Service, Public Works Department and Police. In fact the soldier—quite apart from his prowess in battle—was for fifty years and more the backbone of the Administration. The British subaltern alone deserves a chapter to himself. And now, to India's good fortune, the edifice has been fitly crowned by a soldier-Viceroy, who is also a statesman, one who will stand for the interests of both countries in the critical years ahead.

In view of all that has been done and may yet be done by Britain in India, it is disturbing to read Lord Elton's conclusion that 'the profound ignorance on the subject of the

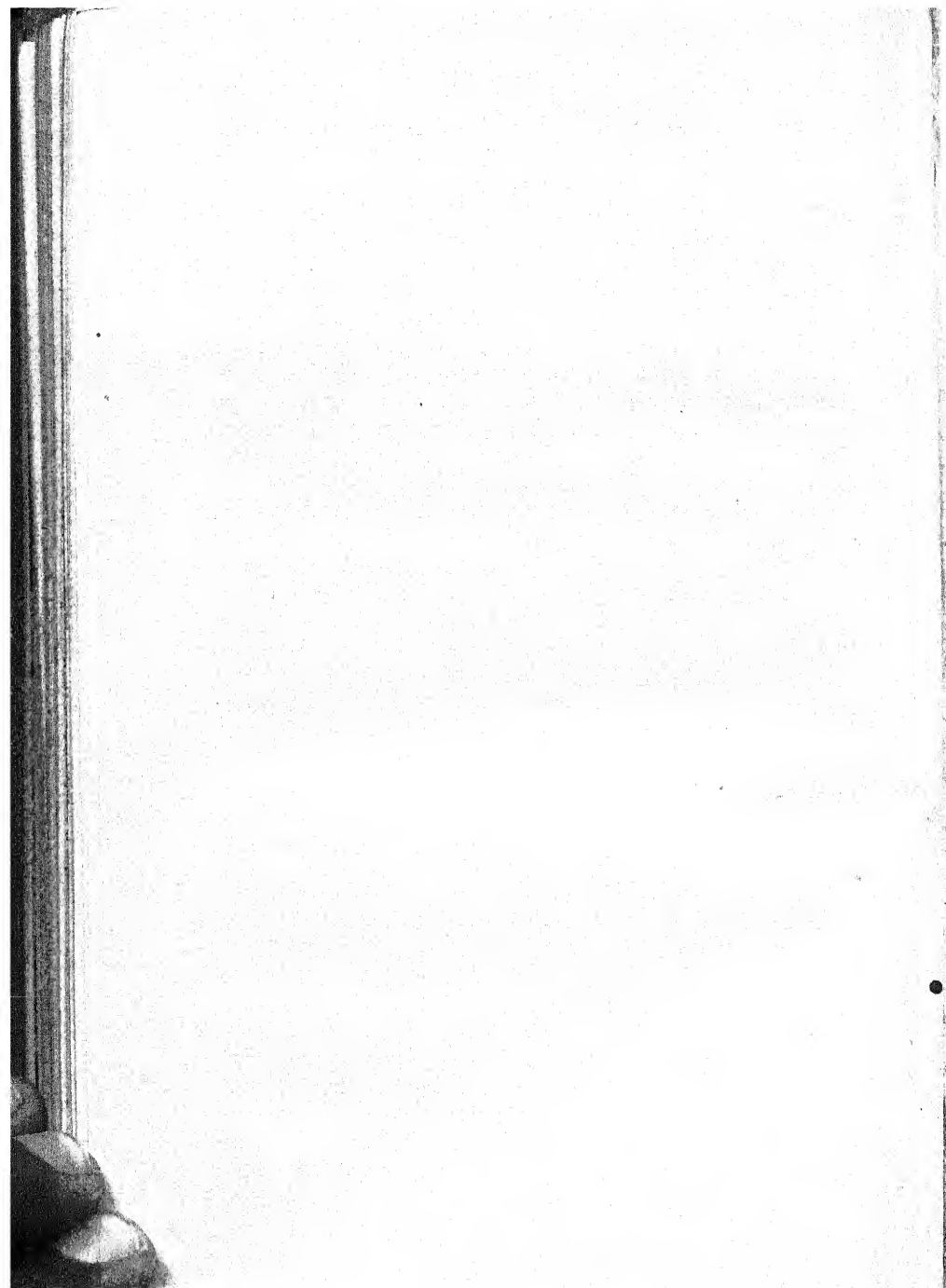
Empire, from the top to the bottom of the educational scale, has done much to promote the crying down of our Empire now fashionable in certain circles. Unofficial bodies '—he adds—' are doing what they can to encourage the teaching of Empire history ; but what is required is a lead from the Government.'

If this partial record of work done by men in certain Imperial Services lifts a corner of the curtain that seems to hang between India and the bulk of British readers, it will have served a part of its purpose conjointly with the companion book that will carry on the record of things done in other Services : the Police, Woods and Forests, Education, Medical Missions and—not least by any means—the work of British women for the women of India.

These will be grouped under the title, *Knights of Unrenown*, and both books, as a whole, may serve to confirm the balanced verdict that ' vast achievements and melancholy failures make up the sum of our record in India ' ; but the achievements, on the whole, may fairly be reckoned more prodigious than the failures. Those achievements have played an impressive part in lifting India to her present proud position in that great human family, the British Empire—a phenomenon to which history shows no parallel.

PARKSTONE : April 1942.

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